Sheet Metal - Roofing - Warm Air Furnaces - Stoves

Vol. 91, No. 4

CHICAGO, JANUARY 23, 1926.

\$2.00 Per Year



Success

THE many important and exclusive features of the Standard Service Heater make it an unusually big favorite.

All of these features are essential to the efficient operation of the heater.

Particular attention is called to the new shaker mechanism, unlike anything you have ever seen. The slot in the front is completely closed at every position of the shaker handle, including the dumping operation.

Our 1926 models have new style grates which will be shown and explained in a later issue of this magazine.

Our Ten Year Service Bond

The Success Heater is a BOSDED Furnace. Our Ten Year Service Bond Enven to the buyer of every Success Heater. It gives him a feeling of security that no other warranty can give.

It is always easier to sell a turnece that is fully guaranteed by the factory. Let us tell you how this Success Service Bond helps sales.



WE want to send you full details concerning the Success sales agency for your territory and our new catalog which describes and illustrates the complete Success Heater line. Write today.



Success Heater Manufacturing Co., Des Moines, Iowa

Control Ohio Directored Pen

New Improvements in Fittings and Registers

Mueller designing engineers have perfected a new Snap-Lock now found on Mueller stack and furnace fittings. This new improvement in Mueller fittings makes possible better and quicker permanent installations. Now any length of single stack can be built without solder.

Because of more thicknesses of metal at the lock, the stack is more solid, although it takes up no more room than the old "S" hook connection. By applying but a slight pressure the stack may be snapped firmly into position—a big advantage in hard-to-reach places. Patents have already been applied for on this exclusive Mueller device.

In accordance with the recommendations of the Standardization Committee the new line of Mueller Registers is built 2" above the floor line. The new designs are made in both round and square corner styles, in six standard sizes, and in all finishes. The new 12"x13" size illustrated can be used for 12" pipes without moving the studdings. Greater free air area is afforded by this type of grille.

Write for New Catalogs and Prices.

L. J. MUELLER FURNACE COMPANY

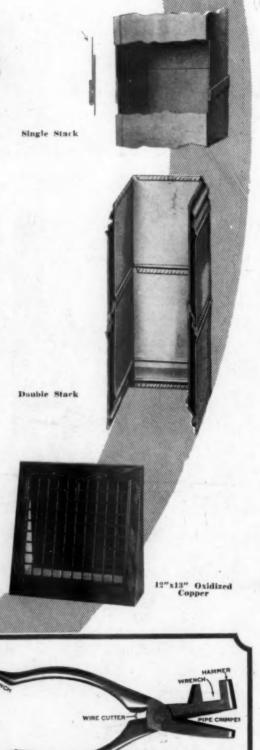
193 Reed Street

Milwaukee, Wisconsin

Makers of Warm Air Furnaces, Steam and Hot Water Boilers, Tank Heaters and Garbage Burners, etc.

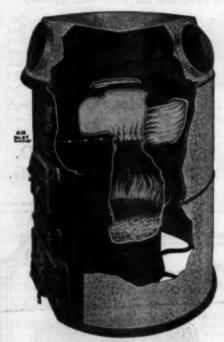
> Warehouses: Boston, Baltimore, Detroit, St. Louis, St. Paul, Minneapolis, Ft. Collins, Colo., Salt Lake City, Senttle.





The New Utica Merchandising Plan MEANS LARGER PROFITS FOR YOU!

The SUPER-SMOKELESS Furnace is the only really smokeless furnace on the market. It brings satisfied customers and earns big profits for Dealers.



Cutaway View of SUPER-SMOKELESS FURNACE

THE new UTICA MERCHANDIS-ING PLAN is a definite selling plan that brings new customers—sells more furnaces—and increases profits. It has been thoroughly tested by many Utica dealers and is a proved success. Before making your plans for 1926, it will pay you to learn how this remarkable plan builds business for furnace men.

Under the Utica Merchandising Plan, our representatives co-operate closely with our dealers and help them sell the furnaces they buy. Besides the plan itself—which insures more customers and more sales—our dealers get valuable advertising and sales literature, and "cash in" on the many superior advantages of SUPER-SMOKELESS Furnaces.

The new Utica Merchandising Plan places Utica dealers in a distinct class—actually above competition! It enables them to secure the largest possible business and satisfied customers who build future business. It will mean money in your pocket to sit down—RIGHT NOW—and ask us to send full particulars of the new Utica Merchandising Plan!

UTICA HEATER COMPANY

UTICA, N. Y. Manufacturers of the CHICAGO, ILL.
CELEBRATED LINE OF WARM AIR FURNACES FOR EVERY HEATING NEED



UTICA HEATER COMPANY, Utica, N. Y.

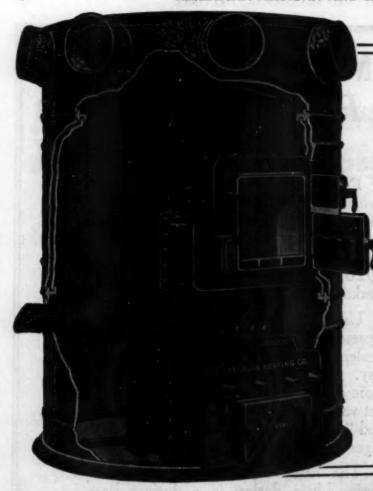
Gentlemen:

Please send, without obligation to me, complete information about your SUPER-SMOKELESS Furnace and the new UTICA MERCHANDISING PLAN.

Name ...

Address

F2-103



Only real quality can make real = profits for you-

AND when you decide to sell steel furnaces, which you will some day, remember that the construction of the furnaces illustrated here has the features of construction that have

"HOME COMFORT"

Steel Furnaces

famous favorites for over half century

True their construction has changed with time, but only when real quality features could be added. Re-cent improvements on Home Comfort furnaces have increased their heating surfaces and made them more efficient and economical consumers of fuel. (Notice the gas and soot consuming features shown on the feed door.)

We have a special circular called "A Dozen Appeals to Reason" which points out some of the "Home Comfort" features. Write for it today.

ST. LOUIS HEATING CO. 2901-11 Elliot Ave., St. Louis, Mo.

PITTSBURGH DISTRIBUTOR
Wagener Bros., 3605 East Street

IF you are out after quality and quantity furnace business dealing with a trade that demands high grade goods at a reasonable price,

BRILLIO

FURNACES

will interest you. Study this illustration and the list of features below. You may be selling an old reliable line—but how about up-to-date construction? The dealer who is awake will sell better warm air heaters—he will investigate them fully and decide on BRILLION quality and reliability.

Just send the coupon—we will do the convincing with our quality and price.

Lever-Shaker Handle Full Cast Front
Extra Large Double Doors
Extra Large Water Pan
Extra Large Ash Pit
Extra Heavy Corrugated
Fire Pots Extra Heavy Corrugat-ed Dome

Large Cast Convertible Radiator with perma-nently tight joints.

Use the coupon below now

Branches in Chicago, Ill., Minneapolis, Minn., Milwaukee, Wis., Scattle BRILLION FURNACE CO., 200-300 Park Ave., Brillion, Wis.

--- Send this coupon today ---Send me full details, prices and your catalogue No. 45.

Name

Attractive prices and what they mean! L OOK around you at the successful busi-nesses in other indus-

THE BEST POSSIBLE
PRODUCT
AT THE LOWEST
POSSIBLE PRICE
VERNOIS FURNACE
AT THE LOWEST
POSSIBLE PRICE
VERNOIS FURNOIS
is of good appear
ance; sturdy con
actual contraction; excellent
proportions; perfect
it and ampi ince; struction; excuirruction; excuproportions; perfeit and amp
weight. Few pair
construction reducinstallation time.
the VERNOIS have an Quality product for your customer. VERNOIS Prices are the lowest possible

tractive profit, and clinches the sale for you.

Send for Catalog At Today

MT. VERNON FURNACE & MFG. CO. MT. VERNON, ILL.



The Big Opportunity for 1926 For Furnace Jobbers

Lies In The Agency For



Warm Air Furnaces

SECURE IT BEFORE IT IS TOO LATE

Radiator

The "GRAND" Radiator is of the horseshoe type and is cast in two parts. Its design provides excellent heat distributing powers; flues are oversise to insure free circulation; and hot gases are forced to pass around both sides of the radiator, thus extracting the maximum heat from all fuel.

Feed Section

Feed Section of the "GRAND" Furnace has been designed to provide the greatest possible radiation and to insure the burning of all gases, thus extracting the most heat from the fuel used.

Firepot

"GRAND" Firepots are extra heavy and ribbed, made in two pieces to allow for expansion and contraction.

Ash Pit

Ash Pit is extra deep and large keeps draft clear and ashes away from grate. Depressed bottom permits sprinkling when removing ashes.

Base Ring

Base Ring and ash pit bottom are east in one piece, thereby reducing installation time and expense.



Clean-Out

Large rectangular shape Clean-Out opening, conveniently located to make cleaning out very easy and simple.

Hot Blast

Provides fresh oxygen which mixes with gases, insuring complete combustion. A great saver of fuel.

Feed Door

A special feature of all "GRAND" Furnaces is a large fire door, which permits the passage of large size shovel or large pieces of wood.

Water Pan

The "GRAND" Water Pan with proper capacity is correctly located to moisten the warm air before it leaves the furnace.

Grates

The grate bars are of the triangular type. Both shaker and side bars are interchangeable; the removal of any or all bars is accomplished by removing locking plate. This plate locks in grooves on side grate bars, making it easy to remove grates without the use of tools.

Unrivaled Production Facilities Enable Us To Offer You a Furnace, Unequalled in Finish and Mechanical Precision—and at a Reasonable Price.

FILL OUT THE CARD BELOW, WHICH IMPLIES NO OBLIGATION ON YOUR PART. DO IT NOW—AND MAIL TODAY.

The Cleveland Co-Operative Stove Co.,

East 67th St. and Central Ave., Cleveland, Ohio.

We are interested in your "GRAND" Furnace Proposition for 1926.

Please send catalog and discounts to jobbers.

Name

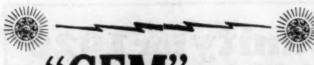
Street

...... State.....

The Cleveland Co-operative Stove Co.

East 67th Street and Central Ave.

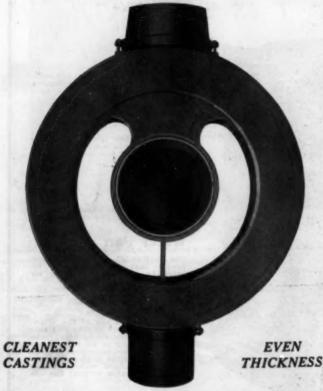
Cleveland, Ohio



of the World

RADIATO

Constructed by a new process of superior moulding



Not just one-piece construction but made with a green sand core by a special moulding method

THIS new means of casting makes the "GEM" radiator the smoothest and most uniform you ever saw. This better "GEM" system of casting not only gives you a better furnace but it reduces its cost. The cast collars, too, are fastened so as to require no drilling. The clean-out door permits a free passage clear around both sides. This radiator

enables perfect fit and extra quick installation.

The "GEM" specially constructed radiator is just one of a long list of real "GEM" features.

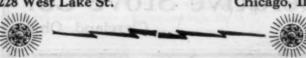
We want to tell you all about the "GEM" in detail and acquaint you with the "GEM" money making agency

WRITE FOR CONTRACT INFORMATION TODAY!

ROBINSON FURNACE CO.

228 West Lake St.

Chicago, Ill.





This chart shows you how much Furnace-Fuel is saved by

Insulation

THE Sal-Mo chart is yours free for the asking—just send the coupon.

This chart is prepared and distributed by the makers of Sal-Mo Asbestos Insulation products.

The brand used as the best by the furnace trade for over a quarter of a century.

> **PAPER** AND BOARD PIPE COVERING CORRUGATED PAPER AIR-CELL BLOCKS CEMENT. ETC.

> > ASBESTOS DIVISION

SALL MOUNTAIN COMPANY

SCRANTON

CHICAGO

BOSTON

Factories: Porter, Indiana-Scranton, Pennsylvania Rockdale, Ohio

Warehouse: 45 Commercial Wharf, Boston

SALL MOUNTAIN CO. 140 So. Dearborn St.
Send me without obligation Fuel Chari "E."



"No This Is Not

a Victrola Patental 6.16.25 The improved air duct increases the heating capacity about 30% in our

WASHINGTON HOME FURNACE

Placed above floor, hence saves the cost of digging cellar.

Produces circulating moist heat for 5 to 7 rooms. Only stove or furnace ever built without name plate or advertisement on the outside. (Name is molded on inside of front feed door.)

Beautiful grained mahogany finish harmonizes with finest ma-hogany furniture. (Also in plain finish for one-third less.)

Made in the same plant in which we manufacture 100,000 Washington stoves and ranges an-nually. Can ship promptly as we now manufacture fifty furnaces per day.

IMPROVED AIR DUCT

Correct location of water pan—Hot Blast Fire Box and many other features

Most beautiful and most expensively constructed furnace now on the market. Gives the user an excellent value and the dealer a handsome profit.

Write today for exclusive agency plan, your district may be open.

Gray & Dudley

Nashville, Tenn.

We melt more than 100,000 nounds of Southern nig iron per day.



Get Behind this Furnace and it will get behind you

IT pays to recommend and install THATCHER Furnaces because you take no chances on performance. Many dealers can tell you of the increase in new business that has come to them because house owners have been so satisfied with their THATCHER Furnaces.

Want the Whole Story?

THE THATCHER COMPANY

Formerly Thatcher Furnace Co. 341 N. Clark St. Since 1850

CHICAGO 39-41 St. Francis St., Newark, N. J. 21 W. 44th St. NEW YORK



Peerless

Furnaces

Founded on correct heating principles, and made as perfectly as human skill can devise.

In construction, in design, in manufacturing methods, in materials used, in tests before shipping. in service.

THE NIAGARA

stands head and shoulders above the ordinary run of warm air equipment because it is laboratory tested from start to finish.

Niagara Dealers are enthusiastic over this furnace. They know that it is made right and will perform right.

THE FOREST CITY FOUNDRY AND MANUFACTUR-ING CO.

1220 Main Avenue Cleveland, Ohio The Forest City Fdy. and Manufacturing Co. Cleveland, Ohio

Send us complete information on Niagara Furnaces at once.

Address



A Useful REGISTER for a Flat Surface

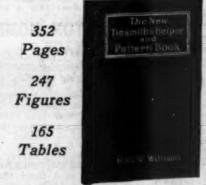
Size 5½ inches over all. 3½ square inches opening.

Made of 22-gauge black

Can furnish in large quantities. Write for prices for single. Big discount for quantity lots.

Write

Hanson Heater Company Cambridge, Minn.



Flexible Leather Binding

Measures 41/2×5 in.

One of the Best and Most Popular Books

on tinsmithing and elementary sheet metal work. This is the latest edition and the contents are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover.

This Book Covers Simple Geometry and Every Phase of Modern Pattern Cutting

Every Phase of Wodern Pattern Cutting from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings. In fact an excellent all-around book for every man in the trade. Mr. Williams writes in an easy-to-read, helpful manner, giving you all the necessary details about each subject he handles. You should add this widely read book to your collection now.

PRICE \$3.00 AMERICAN ARTISAN AND -HARDWARE RECORD

620 South Michigan Avenue, Chicago, Ill.





PATTERNS

FOR STOVES AND HEATERS IN WOOD and IRON

VEDDER PATTERN WORKS ESTABLISHED TROY, N. Y.

WE MANUFACTURE A COMPLETE LINE OF BOLT PRODUCTS, INCLUDING STOVE BOLTS, CARRIAGE BOLTS, MACHINE BOLTS, LAG BOLTS, NUTS, ETC. ALSO STOVE RODS, SMALL RIVETS AND HINGE PINS, CATALOG ON REQUEST.

THE KIRK-LATTY MFG. CO. 1971 W. 85th St. Cleveland, O.

IRON AND WOOD

QUINCY PATTERN COMPANY QUINCY, ILLINOIS

FOR STOVES AND HEATERS

THE CLEVELAND CASTINGS PATTERN COMPANY CLEVELAND, OHIO

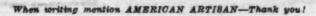
Those CLINKERS in the Furnace can best be removed by a



Pat'd Aug. 19, 1919

FEDERAL Good profit to dealers. Send 50c for sample and particulars, CLINKER TONGS

FEDERAL MFG. CO., HOLLAND, MICH.



"FABRIKATED" REGISTER FACES



INDEPENDENT REGISTER & MFG. CO. 200 Perry Payne Bidg., Cleveland, O.

SAVE MONEY AND FLOOR SPACE

A GOOD LINE FOR THE FURNACE AND HARDWARE DEALER

"ART" Register Shields prevent streaked walls and save fuel. They direct the heat out into the room instead of the ceiling. Standard finish oxidized copper. Other finishes

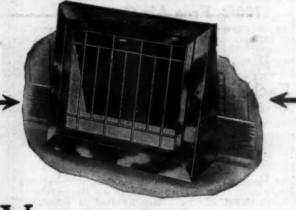
Standard fin-Other finishes to order. A W A Y N E WIRE FUR-NACE BRUSH used occasionally will

NACE BRUSH used occasionally will save many times its cost in a single winter. Write for prices and circulars today.

HARDWARE SPECIALTY COMPANY

221 East Berry Street

Fort Wayne, Indiana



Yes, we admit

it's Attractive it's Efficient it's Economical it's the Vol-Yum register

for volume Furnacework for volume Profits.

Mail coupon today for interesting prices and information.

Rock Island Register Co., Rock Island, Ill.

You may send your interesting prices and information on Vol-Yum registers.

Name Street No.

City and State.....

No. 1000 SERIES PIPE FURNACES



Sell Wiechert Furnaces with this knowledge of the Base, Ash Pit and Grate

and you'll make a better sale—you'll sell the customer more thoroughly.

The base is cast in one piece. It forms the bottom of the ash pit, and substantially supports outside galvanized iron casing. The ash pit is the usual generous Wiechert size, fitted with triangular revolving grate bars, connected by cogs, operating in pairs. Entire grate can be removed through the ash pit door.

Write today for prices and discounts

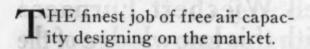


St. Clair Foundry Corporation
Centralia, Ill.
Belleville, Ill.

100% Free Air Capacity

The Improved STEARNS REGISTER

Just Out-



No loss of strength—
No loss of neat appearance—

It's the one register that gets the air across and still does not look like a hole in the wall. Write for list of capacity sizes today.

Our production facilities have been increased and we can now take care of additional business. See the Improved Stearns Register now.

Our selling plan saves you money.

Write for our catalog and prices.



Features

100% Free Air Capacity

The enlarged openings have increased the free air capacity so that we now can guarantee full capacity. For example 9x12 Baseboard Register has 73 sq. inches and is intended for 9" pipe which has a capacity of 63".

Exclusive Patented Operating Device

The only operating device of its kind on the market. It does not use springs or tension. Simple and effective.

Superior Finishes

The highest type of finishing is used on Stearns Registers. They are furnished in all the regular electro-plated effects. Also finished in popular lacquer finishes such as Brush Brass, Antique Brass and in perfect replica of Oxidized Copper. These lacquer finishes sell on same list price as White Japan.

Quality Construction

Stearns Registers are sturdily constructed in every respect. They are exceptionally good looking and suitable for the finest homes.

Sales Policy Lowers Cost

Let us send you a sample together with our prices. We will show you how you can buy first quality registers at a saving by taking advantage of our sales policy.

STEARNS REGISTER COMPANY
617 Fort Street Detroit, Michigan



The Thermometer Says O. K.!

AFTER all, there is only one reason for putting in a heating system—and that, as you know, is to keep a house warm enough to live in.

You know, and we know, that the furnace may bulge with heat, but it is of little use if it cannot get out into the room.

Therefore, it is up to you to install registers with air capacity that equals or exceeds the area of the furnace pipe. Then there can be no question of the efficiency of that part of the heating equipment. The thermometer will say O. K.

However, it isn't necessary to install large registers to accomplish this result, for by the use of H & C Warm Air Registers you can install even smaller sizes than used heretofore, and with greater efficiency. This reduces your cost.

Then too, H & C No. 170 Registers are less costly to install as the quick detachable face is easily removed and permits access to the pipe for attaching or cleaning.

Remember:

A 10 inch pipe has an area of 78 square inches.

An H & C 173-4 8x12 Baseboard Register has 81 square inches of free air capacity.

In the old_style register, even a 10x12 has less than 70 square inches of free air capacity.

The Hart & Cooley Company

New Britain



Connecticut

Published to serve the Warm Air Furnace, Sheet Metal, Roofing, Stove and Hardware Industries American Artisan

Hardware A Record

Yearly Subscription Price: United States \$2.00 Canada . . . \$3.00 Foreign . . . \$4.00

Published EVERY SATURDAY at 620 South Michigan Avenue, Chicago

EDITORIAL AND ADVERTISING STAFF

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CHICAGO, JANUARY 23, 1926

\$2.00 Per Year

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AN INVITATION

AMERICAN ARTISAN courteously invites and urges you to participate in the privileges and benefits of its Service Departments. Any phase of the warm air heating and sheet metal industries or stove sales and window display questions may be profitably and instructively discussed in its pages. If your problem is a knotty or technical one, submit it to the Service Department and secure the benefits of the opinions of other men. It is an exchange information department, and you are asked to relate your accomplishments and tell how you have surmounted difficulties. Wherever possible rough sketches or photographs should accompany the questions or suggestions, as they always make clear the point involved. Use these Service Departments freely; they are yours.

83

The Full Value of Conventions to Manufacturers

CONVENTIONS last longer than the three or four days on the program—they last until the next one—that's why the members keep attending conventions year after year.

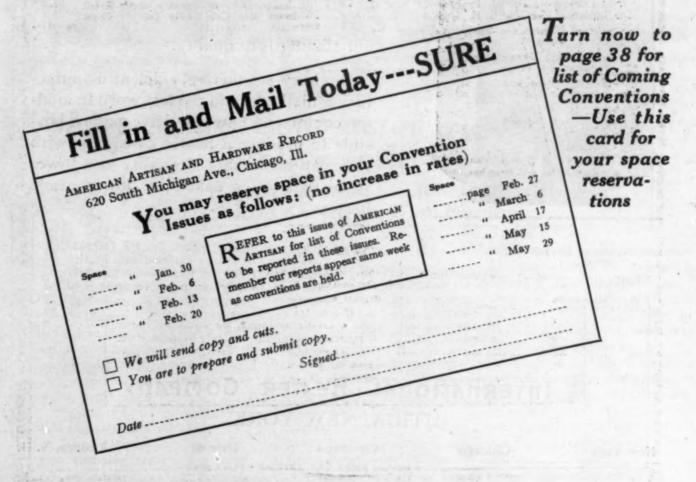
You, as a progressive manufacturer or distributor, take an active and vital interest in conventions because you realize the tremendous value they hold for these business men who are your customers or prospective customers.

You know that Association members are keen business men who operate businesses that make the best kind of outlets for your products.

AMERICAN ARTISAN realizes the value of Association Conventions. That is why it reports conventions for its readers—publishes the reports the same week the conventions are held. These issues in which our convention reports appear are especially desirable as carriers for your advertising.

The men who attend read these reports when they get home—the men who have to stay at home wait for these reports to come to them.

Your company's products should be attractively displayed in additional space in our convention issues.



The New

INTERNATIONAL

Warm Air Furnace

Be Fair to Yourself!

Send for information to be thoroly posted on the new furnace before placing 1926 contracts.



Date.....

INTERNATIONAL HEATER CO., Utica, N. Y.

- () Please send catalog of new ECONOMY FURNACE.
- () Please quote prices.
 Use approximately......Furnaces per year.

Name

PICTURES can give you only a general idea of this wonderful new International furnace. You can get some appreciation of its fine general appearance but you cannot see the attractive blue front nor any of the finer points of construction.

Briefly stated, this is just the kind of heater that you would expect International to bring out.

The name INTERNATIONAL has never been connected with cheap furnaces and it is our intention always to maintain our standards of quality.

Quantity production, efficient manufacturing methods, and the last word in modern equipment, however, have made it possible to produce a heater consistent with International ideals of quality at a lower price than often asked for lower grade heaters.

This new furnace rounds out the International line. It brings International quality within the reach of those who formerly have had to buy on price regardless of quality.

Write today for catalog, Form 1752-A, or call up our nearest branch office.

INTERNATIONAL HEATER COMPANY

UTICA, NEW YORK

New York

Chicago

Cleveland

Detroit

Nashua, N. H.



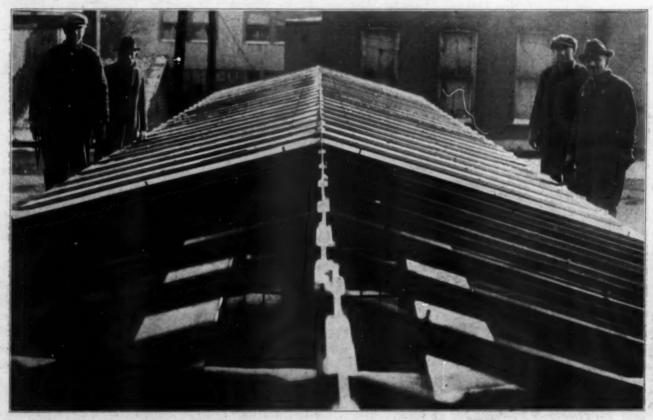
American Artisan Hardware A Record



Vol. 91.

CHICAGO, JANUARY 23, 1926.

No. 4.



Skylight Erected on Roof of Elks' Temple, Warsaw, Indiana, by Schlemmer-Schlemmer Sheet Metal Contractors. Skylight Is 52 Feet Long by 12½ Feet Wide

Sheet Metal Contractor Is an Extremely Active Individual

Required to Have Much More Specialized Knowledge Than Formerly

THE accompanying illustrations show a skylight and a dust collecting system installed by Schlemmer-Schlemmer, 213 South Buffalo Street, Warsaw, Indiana. These illustrations indicate the extreme variety of work the sheet metal contractor of today is called upon to execute in contrast to the limited scope of his work in the past.

Mr. Blount L. Schlemmer has the following comments to make:

"About a year ago we installed a dust collecting system in a local wood-working factory, making the collector, piping and necessary hoods for the different machines. This job has been in daily operation since then and we know it has proved satisfactory because the owners of the plant are still our customers.

"We built the skylight just recently for the Elk's Temple of Warsaw, Indiana, and received many favorable comments on our work.

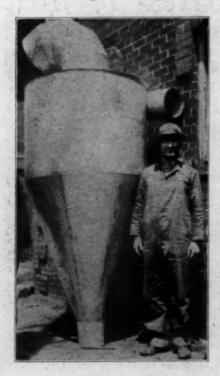
"The skylight is 52 feet long by 12 feet 7½ inches wide and is made of Armco Ingot Iron. It has 64

lights, 6 feet by 1 foot 734 inches, and the weight of the structure is carried by three steel trusses and a 2-inch "I" beam. The extreme ends of the "I" beam are supported by the frame work of the Arcade over which the skylight is located.

"The writer and his partner, along with the crew of men who helped to build and erect the skylight appear, in the photograph. Messrs. Schlemmer and Schlemmer appear towards the front on each side of the skylight.

"We are sending this article in as an inspiration to some shop owner, just as reading in the AMERICAN ARTISAN of the achievements of others has inspired us.

"We are only ordinary men with ordinary ability, operating an ordinary shop in a small city. Many times the proprietor in a small city is called upon to solve intricate problems in heating, ventilating and blow



Part of Dust Collecting System

piping. If he gives these problems careful thought and close study, he can keep this business at home with both credit and prefit to himself, where otherwise the business will go to the large contractor in the larger cities."

Here Are the Chairmen of the Louisville Convention Committees

On page 27 of our January 16, 1926, issue there appeared the opening statement about the convention of the National Association of Sheet Metal Contractors. This convention is going to be a tremendous success. Everybody is going to it. The trip, however, is going to require a great deal of planning on the part of the attending delegates

as well as the Louisville men.

For that reason we want to give our readers all the information possible so that they can plan to better advantage.

Here are the names of the chairmen of the various committees. General chairman, F. F. Schupp; finance, Albert Fink; entertainments, J. J. Hession; printing, Henry Daringer; program, Joseph C. Wagner; reception, L. C. Heck; transportation, Fred Schwab; ladies, O. E. Hutchison. Inquiries addressed to any one of these chairmen at the Kentucky Hotel, Louisville, Kentucky, will produce any desired information.

Zinc Production and Consumption Break Records in 1925

New Year Opens With Strong Market— American Stocks Reduced to Low Point

ZINC has maintained its reputation for presenting a constantly-changing position, although in 1925 the market movement more closely followed the lines predicted than in preceding years. World production last year was the highest on record at 1,113,000 metric tons, but consumption also broke records and in 1925 actually exceeded output.

The New Year opens with a strong market, albeit the London price is well below the parity of St. Louis. The basic reason for this is the expansion in United States consumption in the last quarter of 1925-a condition which not only counteracted the lessened exports, but reduced American stocks to the lowest point for many years. Consumption in England as well as on the Continent has been well maintained throughout the year, except in Germany, where the demand fell away in common with other metals in consequence of trade depression in that country since September. One wonders what would have happened to the markets had the German situation kept good; doubtless there would not have been enough metal to go round and Europe would have been more dependent than ever upon regular supplies of American Slab Zinc.

Prospects for 1926 may be summarized by the statement that the year is likely to be marked by more violent price fluctuations than usual. In Germany trade and industry are just about as bad as they can be, ice is hindering the transport of Silesian metal, and at time of writing floods are disturbing operations in Belgium and Holland.

Generally speaking, the year has been a profitable one for European smelters, thanks to the satisfactory market level which has prevailed throughout the year. Ore supply continues to govern the situation, and there are no further hopes of improvement in this direction than existed a year ago. It is true that Continental smelters have bought a moderate tonnage of concentrates on the Tri-State field, these purchases being actuated by the desire to keep plants more or less fully occupied rather than the hope of securing a treatment profit. The supply of ore available from Western America has exceeded expectations, but it is recognized that this avenue may be closed in eighteen months if the project to erect a domestic smelter is proceeded with.

The zinc rolling mills have enjoyed a good year and English galvanizers at least have nothing to complain of. Continental rollers and English galvanizers alike are happily placed with orders for delivery over the first quarter of the new year.

High grade zinc has readily sold at a satisfactory premium over the price of Prime Western, but I expect this spread to be narrowed in 1926 as a result of the greater production of electrolytic Zinc at Anaconda and Trail. Unless I am much mistaken the year which has just opened will be marked by important metallurgical changes and it is surely not before time that improvement in melting practice were ushered in.

World stocks of Zinc as at Janu-

ary	1st,	1926,	are	estimated	as	fol-
lows	:					

															1	Metric
																tons.
United	States								0	0	0	0	0	0		8,450
German	y and	P	0	la	no	1.	0	0				0	0	0		10,400
Canada			0				0	10	0.	0	0	0	0			1,200
Great F	Reitain															300

Belgium	1,800
France	800
Scandinavia	
Australia (including unsold shipments affoat)	
Far East	500
Elsewhere	500
Total	26.150

Sheet Metal Roof Stays Progress of Fire of Industrial Plant

Curls Down Over Fire Making Effective Fire Wall in Line of Flames

By C. H. THOMAS, Kennett Square, Pennsylvania

SHEET metal roofs have proved their efficacy to be of service to mankind in ways that have taken this material completely out of the competitive class. To particularize,

of the burning building acted as a blanket over the flames, curling down over the fire and actually hindering its progress as effectively as a fire wall would have done had roof was during the fire, as it were.

The fire started in a frame structure used as a warehouse, and long before the fire fighting apparatus could be brought to the scene, it was raging fiercely. A paint shop nearby was soon ignited. The warehouse, the origin of the fire, had no protecting roof, but the paint shop was equipped with the sheet metal roof, as shown. Officials of the plant attribute the fact that the fire did not spread to other buildings of the plant to the fact that the paint shop did have a sheet metal roof, which stayed the progress of the fire, confining it to a small area. Fire experts, too, who visited the plant immediately after the fire were of the opinion that the sheet metal was responsible for the fact that the entire plant was not destroyed, although the fire was one of the worst they have ever experienced.

The company was seriously inconvenienced for a long time be-



View Showing Area in Which Fire Was Confined with Sheet Metal Roof Much in Evidence.

recently fire ravaged the plant of the American Road Machine Company, at Kennett Square, Pennsylvania. So great was the danger of a general conflagration that fire fighting apparatus from many surrounding cities was called upon for assistance. In this instance sheet metal proved beyond all doubt its ability to stem the tide of fire and to actually confine it to practically the immediate area of its origin.

The conduct of the sheet metal in this particular instance was admirable. While the fire was at its height and the firemen were battling courageously and heroically to subdue the flames, which were mounting steadily higher, the sheet metal roof there been one there. The two illustrations reproduced herewith give the reader a graphic description of what the action of the sheet metal



Closeup View of American Road Machine Company Paint Shop Showing Sheet Metal Roof Hanging in Place. Fire Was Checked at Left.

cause of the fire. They have learned one thing from it, however, and that is that a sheet metal roof is absolutely indispensable as a covering for industrial or residence buildings. This fact was effectively and conclusively demonstrated for them during the fire outlined.

Of interest also is the fact that some of the sheet metal that had withstood the tremendous heat of the flames of the burning building, was later used on other buildings, showing that the fire had done little if any damage to it.

Showing Construction of Funneled Hopper Pail Requested by Beardstown Subscriber

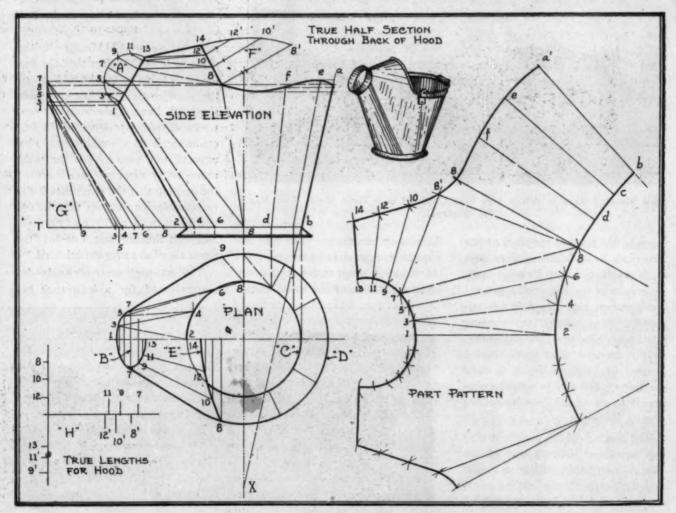
Drawing Also Gives Good Idea of Method of Construction

Written Especially for AMERICAN ARTISAN by O. W. KOTHE, Principal, St. Louis Technical Institute, St. Louis, Missouri

RESPONDING to the inquiry of a subscriber from Beardstown, Illinois, for a pail with a snout, will say that the accompanying drawing will give the solution nicely. The general design can be made at pleasure, as affecting size and shape. The curved line, a-e-f-8, of elevation can

also be made as shown, or made straight.

First draw the base line of elevation, and the center vertical line, and then fill in the outline of side elevation. Next describe section "A" for the round end of hopper, and divide in any number of equal spaces, and square lines back to the base 1-13. Also square out the line 8-8' and making it equal to the half diameter of plan, as indicated by line 8 of the lower half. Then describe the arc, 8'-14, of elevation to a uniform curvature, as shown by section "F." Treat this section in say three equal



Patterns for Funneled Hopper Pail.

spaces and square lines back to the shield line 8-14. These become the half diameter lines as indicated in plan.

It is also possible to first develop the plan view, and drop the points 8 and 14 from elevation into plan, and then sketch the plan line 8-14, and then see that the elevation and plan lines correspond in length. After this develop the part plan "B" for the hopper end, and draw triangular lines in both plan and elevation as shown. Number all points and bends. Now the hopper end must be developed by triangulation, while the back end can be developed by the sweep method if desired, or by triangulation. In this case we use the sweep method.

In the lower portion of the hopper, we use the plan base lines in the diagram "G" as the base of triangles, and the altitudinal points as the rises, as 1-3-5-7-8, which gives us the true lengths. For the upper portion of hopper we can do the same; but in this case we work from the elevation, deducting the length of the sectional lines between "A" and "F," which gives us the offset for the lines in diagram "H." The base lines are picked from elevation, so that we do not need the plan at all, if we would wish to work the lower portion of hopper in the same way.

To set out the pattern, we start with line 1-2 of elevation and then use the girth spaces from section "A" and the bottom section of plan. With these we describe arcs 3 and 4. Pick true length, 3-3 from diagram "G," and using point 2 as center, cross arcs as at 3. Now pick true length 3-4 from "G," and using the new point 3 as center, cross arcs at 4. Next describe the girth arcs 5 and 6, and then cross these arcs with true lengths 5-5 and 5-6. Continue in this way until the points 7-8 are established. Now observe that the large triangle falls on points 7-8-8 of elevation and so we pick the line 8-9 from "G," and using 8 in pattern as center, strike arc as at 8'. Next pick true length 7-8 from diagram "H," and using 7 in pattern as center, cross arcs as in point 8'. From

here on we use the girth from section "F" for the large end of hopper, and those spaces from "A," and continue the development until points 13-14 are established.

After this the back end can be added by the sweep method, the

same as we have shown, which gives the pattern. In practice the seams would be made along the sides, so the back end would be developed in one piece. Edges for seaming and wiring must be allowed extra in this pattern.

Cook County Sheet Metal Club to Raise Initiation Fee After March 2

Officers Elected for 1926 and Installed — Plans for Formation of Branch No. 2 Started

A T A MEETING of the Cook County Sheet Metal Club, Branch No. 1, held at 3100 Belmont avenue, Chicago, Friday evening, January 15, it was voted to increase the initiation fee from \$5 to \$25 after March 2, 1926. All men contemplating entrance into the organization would, therefore, find it to their interest to join at once.

The progress of development of the organization has been rapid and encouraging. This fact was revealed when it was voted to have the president appoint a committee of three men to determine the best territory in which to form the second branch of the Cook County Sheet Metal Club. The men appointed by President Guenther for this task are J. F. MacNider, 4339 North Western avenue; Fred Goodall, G. & S. Stove and Furnace Company, 4223 West North avenue: Sam Cripe, Jefferson Hardware Company, 4803 Milwaukee avenue. These men are to determine the boundaries which the branch No. 2 will include and to interest the men in this territory in joining the organization.

An election of officers for the ensuing year resulted as follows: President, R. H. Guenther; vice-president, Edwin C. Becker; secretary, Edwin N. Stahler; treasurer, Samuel Cripe. These men were all reëlected. Henry Deichman was reëlected as trustee for a term of three years. Julius Fleischmann was also elected as trustee for a term of three years, succeeding Samuel Strong, whose term expired.

The hold-over trustees are Henry

C. Trede, Fred Goodall, Mike Rief and John Seidle.

Among many other interesting features of the meeting, Fred Goodall, chairman of the Furnace Committee, made a very interesting report. This report in itself clearly showed the value of such organization.

Joint Sheet Metal Conventions at Indiana Are to Be Held February 16 to 18

Due to the fact that there will be three conventions appealing to substantially the same persons, and each one with a great deal of business to transact and many items of interest to bring before the membership, the joint convention of Indiana Sheet Metal, Indiana Fur-Mets' and Indiana Warm Air Heating & Ventilating Association this year will cover three full days, according to Paul R. Jordon.

The convention will open Tuesday morning, February 16th, at 8:00 o'clock, with registrations. The program will start at 10:00 o'clock with a joint meeting of the three associations, which will be called to order by President Mattingly of the contractors' association. The features of the day's program will be an address by the National Secretary, Edwin L. Seabrook, on the subject, "Get Behind a National Campaign," and an address by E. A. Scott, Editor of the Sheet Metal Worker, on "Ethics in Buying and Selling." It is expected that Mr. Seabrook's address, bringing to the Indiana membership the National point of view, will prove of exceptional interest.

On Tuesday evening the Baltimore Copper Smelting & Rolling Company will give an exhibit and lecture, after which the members and guests of the three associations will be entertained by the Fur-Mets with a dance and card party on the Severin Hotel Roof Garden.

The meeting Wednesday will be a joint meeting of the three associations in charge of the Indiana Warm Air Heating & Ventilating Association.

The meeting Thursday will be in charge of the Sheet Metal Contractors' Association at its opening, later being turned over to President Geitz of the Fur-Mets.

The Banquet and Entertainment given to the members and guests of the three associations by the Fur-Mets, will be held at the Severin Hotel Roof Garden at 6:30 Wednesday evening.

M. Braunston Goes With Brillion Furnace Company

Mr. M. Braunston has gone with the Brillion Furnace Company, makers of the Brillion furnace. The company's Chicago factory branches are located at 706 West 120th street and at 1302 North Halsted street. Mr. Braunston has charge of the North Halsted street branch.

Richard-Wilcox Salesmen and Branch Managers Hold Convention

Men from All Parts of the Country Attend Successful Meeting and Banquet

THE accompanying illustration is that of a group of 64 members of the Richards-Wilcox Manufacturing Company, Aurora, Illinois, makers of door hangers and hardware specialties. The photograph was snapped during a recent sales convention of the company.

The officers of the company believe the conference was the most successful ever held by this company and it was attended by sixty sales representatives and branch managers from all parts of the United States and Canada.

The convention began Tuesday, January 5th, and wound up with a big banquet on Friday evening, January 8th.

During the convention, the salesmen gave selling experiences and all of the new items which have been brought out since the last convention were inspected and discussed, and each of the salesmen received a lot of good points regarding the entire line.

Officers of this progressive company are as follows: President and general manager, W. H. Fitch; vice-president, Lee Michell; secretary and treasurer, Milton D. Jones; superintendent, P. L. Hoffman.

A. Q. Moffat Goes With W. E. Lamneck Company

A. Q. Moffatt, for many years associated with the Wheeling Corrugating Company, has assumed his new duties as sales manager, stove pipe department, The W. E. Lamneck Company, Columbus, Ohio.

C. A. DuCharme, Head Michigan Stove Company, Dies

Charles A. DuCharme, until recently president of the Michigan Stove Company, Detroit, now merged with Detroit Stove Works, died December 28 at the age of 67.

He was born in Detroit September 22, 1858, son of Charles Du-Charme, founder of the Michigan Stove Company. His business career began as a clerk in his father's employ. Later he became successively purchasing agent, secretary, second vice-president and, in February, 1920, president.

He was a director of the Union Trust Company, Peoples State Bank, Detroit Fire & Marine Insurance Company and the Ireland & Matthews Manufacturing Company, the latter one of the largest stamping and screw machine product companies in Detroit, the output being largely automotive. One son, Charles B. DuCharme, is secretary of the merged organization, Detroit-Michigan Stove Company, Detroit.



Included in this group of Richards Wilcox Mfg. Company Salesmen are W. H. Fitch, President and General Manager; Milton D. Jones, Secretary and Treasurer; P. L. Hoffman, Superintendent, and Branch Managers from Boston, Omaha, Los Angeles, San Francisco, Detroit, Chicago, Philadelphia, Cleveland, St. Louis, Minneapolis, Cincinnati, New Orleans, Kansas City, Indianapolis and Seattle.

Wisconsin Sheet Metal Men to Meet in Milwaukee February 2 and 3

Here is the program of the twelfth annual convention of the Master Sheet Metal Contractors' Association of Wisconsin at the Hotel Wisconsin, Milwaukee, Wisconsin, Tuesday and Wednesday, February 2 and 3:

Tuesday, February 2

9:30 a. m.—Meeting of the Board of Directors.

Registration and distribution of badges.

10:30 A. M.—Business. Address of Welcome—Mayor Hoan.

Response—R. Jeske, President of the State Association.

Report of Credential Committee. Reports of Officers.

Report of Auditing Committee.

Roll Call of Officers and Committees.

Committee Reports.

Unfinished Business.

Communications.

Collection of Dues.

New Business.

Proposal and Election of New Members.

Recess-12:00 m.

Tuesday, February 2

2:00 p. m.—"Business Outlook for 1926," by O. W. Rosenthal, President of the Builders' Association of Chicago.

Election of Officers.

Ouestion Box.

Start Something Hour.

Adjournment, 5:00 p. m. sharp.

Banquet, 6:30 p. m., Gold Room. Admission to Banquet—by ticket only.

Wednesday, February 3 9:00 a. m.—Naming of Convention City.

Ouestion Box.

Start Something Hour.

Discussion on Business Outlook for 1926.

"Business Ethics and Salesmanship," by George Thesmacher, Cleveland, Ohio.

This Convention Terminates at 12 Noon.

Don't Fail to Attend the Hardware Men's Convention at the Auditorium.

H. C. Konrad Is Manager Milwaukee Branch Unishear, Inc.

The Unishear Company, Inc., owing to the increased demand for its product, has been obliged to seek larger quarters and to employ additional help in order to fill orders. Although it is still at the present address at 170 Fifth avenue, New York, it has leased suite 1204-5. The company is pleased to announce that the "Unishear" is manufactured in its entirety in the United States and that it is in a position to fill and ship orders without delay.

For the convenience of the Middle Western territory, an office of the Unishear Company, Inc., has been established at 79 South Water street, Milwaukee, Wisconsin. H. C. Konrad is the western manager and will be glad to demonstrate the Unishear and in every way coöperate with the sheet metal contractor.

Western Central Association of Stove Manufacturers Meet in Chicago

The Western Central Association of Stove Manufacturers held its annual meeting at the Congress Hotel, Chicago, Thursday, January 21. Officers were elected as follows: President, John Underwood; Vice-President, Wilson Smith; Treasurer, Leo H. Booch; Secretary, Allen W. Williams.

In commenting on the outlook in the stove industry, Secretary Williams said that conditions were extremely favorable for a good year. Dealers' stocks are low and a spirit of optimism prevails.

Bureau of Census Now Compiling Biennial Census of Manufacturers.

The Bureau of the Census of the United States is now engaged in collecting the data for the biennial census of manufacturers, which will cover industrial operations during the calendar year of 1925. This census is required by an act of Congress approved March 3, 1919.

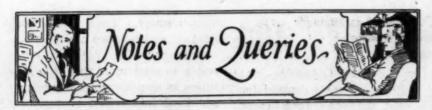
The schedules or questionnaires have already been mailed to all the

manufacturers. These should be filled out and returned promptly.

At the census of 1923 it was necessary to send more than 100,000 letters to manufacturers requesting additional information or verification or correction of their reports. This, of course, delayed considerably the publication of the statistics. It is highly important, therefore, that you answer each question as accurately as possible and that you mail your report promptly to the Bureau of the Census.

In preparing your schedules, care should be taken to answer each inquiry that applies to your operations. Do not combine items that are called for separately. If you can not give exact figures, careful estimates will be accepted by the Census Bureau. In answer to Inquiry 6, the value of production, not sales, is called for. The sales during the year may considerably exceed or may fall considerably below the production during the year. Where no exact records of production are kept, the value of the production for the year may be ascertained by adding to the value of goods sold, the increase in the stocks of finished goods (or stocks in the process of manufacture) on hand at the end of the year as compared with the beginning of the year, or by deducting the decrease in such stocks from the value of goods sold. For example, if the sales during the year amounted to \$50,000 and the value of stocks on hand increased from \$10,000 at the beginning of the year to \$15,000 at its close, the value of the production during the year would be \$55,000; but if the stocks on hand decreased from \$10,000 at the beginning to \$5,000 at the end of the year, the value of production would be only \$45,000.

We urge all manufacturers in our city to cooperate with the Bureau of the Census in making the coming canvass in the shortest possible time and the most economical manner. These figures are published for the benefit of the manufacturing industry and the usefulness of census statistics is increased by making them available at an early date.



"Robertson" Protected Metal.

From U. S. Sheet Metal Works, 1700 Kansas Avenue, Kansas City, Missouri.

Please advise us who makes "Robertson" protected process metal.

Ans.—H. H. Robertson Company, Pittsburgh, Pennsylvania.

Oil Burner for Small Coal Range

From Faloon-Pilmer Hardware and Supply Company, 613-615 Main street, Wellsville, Ohio.

Can you tell us who makes an oil burner to be used in a small coal range?

Ans.—Thomas and Armstrong Company, London, Ohio, and Gloria Light Company, 112 North May street, Chicago.

Gas Burning Furnaces.

From Charles O. Foedisch and Son, 5111 West North Avenue, Chicago. Please tell us who manufacture

gas-burning furnaces.

Ans.—A. H. Robinson Company, 5015 Detroit Avenue, Cleveland, Ohio; Wise Furnace Company, Akron, Ohio; The Hess-Snyder Company, Massillon, Ohio, and Thomas & Armstrong Company, London, Ohio.

"Ardent" Cook Heater.

From Percy H. Smith, 201 12th Street, Fulton, Missouri.

Can you tell me who makes the "Ardent" cook heater, No. 17?

Ans.—Auto Stove Works, New Athens, Illinois.

Vacuum Furnace Cleaners.

From Valley Heating Company, State and Lawrence Streets, Appleton, Wisconsin.

We should like to know who manufactures a vacuum furnace cleaner.

Ans.—B. F. Sturtevant Company, 1042 Wrigley Building, Chicago, and Boston, Massachusetts, and William R. Brown, 319 Main Street, Buffalo, New York.

Laundry Dryers.

From The Peninsular Furnace Company, 111 North Fifth Street, Louisville, Kentucky.

Will you kindly tell us who makes laundry dryers for burning gas, also for burning coal?

Ans.-1. The W. E. Lamneck

Company, Columbus, Ohio, and Williamson Heater Company, Cincinnati, Ohio. 2. Chicago Dryer Company, 2210 Crawford Avenue, Chicago.

Steam Tables.

From Roberts Sheet Metal Shop, 610 Massachusetts Street, Gary, Indiana. Please advise us who makes steam tables.

Ans.—Albert Pick and Company, 212 West Randolph Street; Janows and Kramer, 1645 Carroll Avenue, and Peppas and Alex Company, 169 West Lake Street; all of Chicago, Illinois.

Kelvinator.

From The Peninsular Furnace Company, 111 North Fifth Street, Louisville, Kentucky.

Can you tell us who makes the Kelvinator?

Ans. — Kelvinator Corporation, Detroit, Michigan.

Air Washing and Cooling Machine.

From Blockie Furnace and Supply Company, 18 North Lee Street, Oklahoma City, Oklahoma.

We should like to know if there is a firm in Chicago who is manufacturing an air washing and cooling machine.

Ans.—Yes; B. F. Sturtevant Company, 1042 Wrigley Building, and E. Vernon Hill Company, 64 West Randolph Street.

Copper Roofing Nails.

From W. A. Kuehl, 42 South Butrick Street, Waukegan, Illinois.

Please advise me who makes copper roofing nails of every description.

Ans.—American Steel and Wire Company, 208 South La Salle Street; C. G. Hussey and Company, 212 North Jefferson Street, and Merchant and Evans Company, 347 North Sheldon Street; all of Chicago, Illinois.

Blower and Exhaust Fans.

From W. A. Kuehl, 42 South Butrick Street, Waukegan, Illinois.

Kindly inform me who makes blower and exhaust fans.

Ans.—B. F. Sturtevant Company, 410 North Michigan Avenue; Heating Systems and Supply Company, 169 North May Street, and Johnson Fan and Blower Company, 163 North May Street; all of Chicago, Illinois.

Copper Rivets.

From W. A. Kuehl, 42 South Butrick Street, Waukegan, Illinois.

Can you tell me who makes copper rivets that will compare in size with tin rivets?

Ans.—C. G. Hussey and Company, 212 North Jefferson Street, and Merchant and Evans Company. 347 North Sheldon Street; both of Chicago, Illinois.

Pure Bismuth Metal.

From Emil Knain, Northwood, North Dakota.

Please advise me where I can obtain pure bismuth metal.

Ans.—S. Birkenstein and Sons, 1056 West North Avenue, and National Lead Company, 900 West 18th Street; both of Chicago, Illinois.

"Eden" Electric Washer.

From George Bishoff, Marinette, Wisconsin.

Can you tell me who succeeded the Brokaw-Eden Company of St. Louis, makers of electric washing machines? I want to get a complete set of cylinders for the "Eden" washer, serial number 61878.

Ans.—This concern is now known as Eden Washer Corporation and is located at 225 West 34th Street, New York City.

Electric Sign Letters.

From J. Lochead, Forest, Ontario, Canada.

Kindly inform me who makes electric sign letters.

Ans.—George Steere, 434 South Dearborn Street, Chicago, Illinois.

Edwin A. Scott Proud Papa of 81/4-Pound Baby Girl Born Last Week

Edwin A. Scott, President of the Edwin A. Scott Publishing Company, 45 West 45th Street, New York, familiarly known in the trade as "Scotty," is leaving his office early these days. The reason is little Helen Lyons Scott who weighs 8½ pounds and who came last week—January 15, to be exact.

Congratulations are in order and we send ours with a hearty well wish to both Mr. and Mrs. Scott.

The Editor's Page

Benefits to Be Derived from Attending Conventions

THE convention season is about to open. You are a member of at least your local or state association. By becoming a member of these associations you have endorsed the fundamental reasons for their existence—which are, in the final analysis, the betterment of the industries they represent.

Your action in joining the association is an indication that your character and attitude toward the industry as a whole is right; that is, you as an individual have ideals; you believe these ideals can be attained in the

industry generally by organization.

Your state association meets in convention once a year. This is the only opportunity you have of getting together with all the other members of your association at a minimum of expense. Certain portions of every convention program are given over to "start something hour" activities. Each individual has an opportunity to ask questions that have occurred to him during the year. Any one of these questions can be cleared up in short order when group action is brought to bear upon them. If no solution is obtainable at the time, the matter is referred to a committee for proper action. The point is that the entire force of the association is brought to bear upon a question introduced by an individual. The association's entire resources are at the disposal of the individual member. No one who gives the matter the least thought at all can fail to appreciate the power for good that is thus put into the hands of the individual.

It is, therefore, incumbent upon each and every individual member of the association to respond to the

appeal of Secretary to attend the convention.

You can send a check for your membership dues. But that is not enough. Unless you present yourself at the convention in person, you are robbing the association as a whole of your ideas.

It often happens that matters of vital personal importance turn up at the last moment preventing the person from attending the convention. Such occurrences should be the only reason for non-attendance. Many men have taken their responsibility to the association so seriously that when they are prevented from attending the meeting personally, they prepare a paper containing the ideas they intended to bring to the meeting and send it in to be read by the secretary. These men always have something of value to the industry at large to offer. Their interest is so great in what they are doing that ideas seem to radiate from them constantly.

The convention session is the dueling ground of ideas. It is here that a man has his judgment tuned to precision. If his theories are bad or lack soundness they will soon be exploded. If, on the other hand, they are good and contain meat, they will be taken up with avidity by others, with credit and honor to him.

No member can afford to miss attendance at his convention. His business interests require such attendance, leaving entirely out of consideration the enjoyment attendant upon such a visit. Turn off your radio, fill up your car with gas and oil and hit the trail to your convention without fail.

Significance of Title Heating Engineer

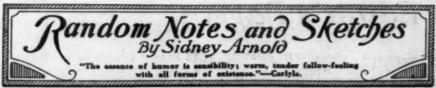
ONE of our subscribers wants to know the definition of a heating engineer. He is laboring under the impression that the title heating engineer is a fictitious title created and employed by some installers of warm air furnaces to add dignity to their profession and places of business. He is quite correct in his assumption.

We admire a man who has sufficient self pride and pride in his profession to want to dignify it as much as possible. There are far too many in the profession who neglect to put their best foot forward, so to speak.

There is, however, a great difference between the man who knows his "stuff" and who trys to put his best foot forward because it is bad business for him not to do so and the man who employs all sorts of external appendages to conceal his ignorance of his job.

The title Heating Engineer is not an officially recognized designation of the fact that the man who uses it has successfully passed a certain examination, thereby demonstrating that he is in possession of specialized training which enables him to do a certain job properly. For that reason the title is misleading. It gives the novice furnace installer a chance to cash in on something which he does not possess. There is no law prohibiting a man from setting up in business, hanging out a shingle reading, "Heating Engineer," thereby creating the fallacious impression that he is fully qualified by experience and training to install furnaces.

The question is, what are we to do about it? The manufacturers have the solution of the problem within their power. They could easily refuse to sell a man their products until he had satisfactorily demonstrated his ability to figure and install a warm air furnace according to the Standard Furnace Code. Such action would impose no hardship upon any man in the business at the present time who really knows his business. Some form of registered title could be put into use by the National Warm Air Heating and Ventilating Association and given to furnace installers who successfully pass whatever test is imposed. The title could then be advertised and the public would soon recognize the title of the warm air furnace installer as it now recognizes the M. D. after a doctor's name or any other similar title of designation. Then there would be a positive check on the use of such misleading titles as the one in question, just as there is at the present time on quack doctors, lawyers, etc.



My attention has been called by James Charles Allen to a rather humorous incident which occurred not long ago to C. C. Justman, of the Justman Sheet Metal Works, Dubuque, Iowa.

Mr. and Mrs. Justman have a son 2½ years old, who is always on the job. It is customary for Mrs. Justman to censor little Bobbie (for that's his name) whenever occasion requires, by saying, "Bobbie, mamma spank."

One night recently Mr. Justman was working at home. In so doing he got the floor well littered with dirt. Bobbie, who was watching his father work, noticed the dirt the elder had made. Thereupon he immediately said: "Say, Da Da, mama pank Da Da. Naughty, naughty Da Da. See floor all dirty." Mr. Justman does considerable work at a hospital, but last reports indicate that he is still selling warm air furnaces, showing that he has not entered the hospital as a patient."

During the war Joe Stearns, while on a leave of absence in Europe, was approaching the station in a firstclass compartment of a railroad train

Joe was comfortably ensconced in the train and was peacefully smoking a Melachrino. The train stopped at the station and a very stately and dignified middle-aged lady got into the comparement. She gave Joe a haughty glance, signifying that she was much adverse to his smoking. Joe, however, continued to pull away on his Melachrino, blissfully unconscious of the haughty stares being directed at him.

The lady seated herself and continued to cast disapproving glances at Joe who, although he is a gentleman, paid no attention to it.

The atmosphere became quite strained and upon approaching the

station the lady called: "Guard! Guard!" Immediately upon the approach of the guard, to her surprise, Joe said to him: "Have this lady removed from this car. She has a third-class ticket." The lady threw her head haughtily in the air and departed for a third-class car before the guard could comply with Joe's wishes.

Two strangers sat opposite. One of them addressed Joe after the lady had gone and asked: "How did you know she had a third-class compartment ticket?"

Joe said: "Why, I saw it in the cuff of her coat and it was the same color as the one I had."

I am retailing a little experience which came to me indirectly. I hope you will read it and benefit by having done if perchance the shoe should fit or even pinch a little. Here it is:

They had reached the last subject on the program of the executive conference.

"This mistake has cost the company eleven hundred dollars," said the president, "and I want—to know—who—is—responsible!"

He glared around the table at the eight men next to him in rank in the organization. He was prepared for a session of that exasperating game called Passing the Buck.

"I am responsible," said the youngest vice-president. "And the only explanation I have to offer is that I acted like a dumb-bell."

There followed a silence pregnant with trouble.

The president fixed his eyes on the youngest vice-president and said in an even tone:

"I'll see you here right after the meeting—and the meeting is over."

The other men, melting out of the room, left the two, seated, facing each other.

"This has never happened before since I took hold of the company six years ago," the president declared.

"I'm sorry," said the young man.

The president, who like many business successes, was both hardboiled and sentimental, grinned and repeated:

"Sorry? I'm delighted! I don't relish that eleven hundred dollar loss. But I'm sick of buck passing and alibis, and I thank God I've found someone in this outfit with the courage to look me in the eye and admit he is wrong."

K. L. Seelbach, Vice-President, Northern Institute, Cleveland, Ohio, has a question to ask as follows:

"Who says there ain't no romance in the heating game?" The following was turned in from one of our student's lesson reports. It is the answer to the following question: Give an example of heat transferred by conduction.

"'A man walking down the street and enjoying normal health with the usual body temperature of ninetyeight and three-fifths degrees, which accompanies such states, is confronted with the unusual spectacle of a girl with a chill. Due to said chill her temperature hovers about the ninety-seven mark. Now the man, being an ardent advocate of conduction, suddenly decides to kiss the girl, in spite of the seeming absurdity of the notion. Of course the molecules in the man's lips are jumping about with much more enthusiasm than those in the cold lips the girl. During the contact of lips there is a transfer of heat from the warm lips to the cold ones and the molecules in the cold ones assume a more lively attitude, accelerating gradually in velocity until the temperature of ninety-eight and threefifths degrees is reached, thereby establishing a complete harmony. (The above to be considered in a purely mechanical light. All physiological, psychological and emotional influences aside.)'

"Is this the right answer?"

Heavy Losses Sustained Because Customers Fail to Pay Bills When Due

Credit Problems Require Joint Action on Part of All Local Business Men

SERIOUS consideration is being given by leading retail credit men to a movement that will have for its principal object the educating of charge customers to the need of a more careful observance of the terms on which they are granted the privilege of buying merchandise on credit. Practically, if not actually, all of the stores catering to other than the very wealthiest classes of trade stipulate that payment for all charge purchases shall be made in thirty days, yet one of the best known credit men in the country is authority for the statement that it is the exceptional store in which more than 50 per cent of the charge customers settle their bills that promptly.

"It is not that customers are dishonest that they let their bills run longer than they agree to at the time accounts are opened," this credit man said. "This is shown by the fact that the annual bad debt losses of very few stores with properly operated credit, departments exceed one-quarter of one per cent of the annual gross sales. It is further shown by the relatively small number of accounts that ultimately have to be turned over to attorneys or agencies for collection.

Trouble Due to Laxity of Collection Methods.

"The trouble is, basically, that in the stress of modern competition the merchants of the country have become a bit lax in insisting upon a close observance of the terms on which charge accounts are opened. This has got many of their customers into bad payment habits and, while these customers pay their bills sooner or later, their delay in doing it is costing the merchants a great deal of money in the course of a year. As time goes on, these losses are tending to increase rather than diminish, and it is this fact that has

focused the minds of far-seeing credit men on the need of some method of improving the payment habits of the customers whose names are on their books.

"Just how slowness in paying bills incurred through purchases of goods on credit operates to the disadvantage of the merchant, and ulti-

This article contains a great deal of food for constructive thought for the warm air furnace installer. Closely associated with doing proper work is the receiving of adequate and prompt payment for such work. And the receipt of payment after the work is done is as much the warm air furnace installer's or sheet metal contractor's problem as it is the problem of any other retail merchant. These men are all dealing with the same phase of human nature. Consequently they can very well join forces and work together.

mately to the customers themselves, has been graphically shown by an article in a recent issue of *The Credit World*:

"'Suppose a banker placed a fixed price on his money instead of interest by the month. Suppose a man borrows \$1,000 for thirty days and the banker asks him to sign a note for \$1,005, payable in thirty days. If the note is paid in thirty days the profit is 6 per cent. If it is paid in sixty days the profit is 3 per cent. If paid in ninety days the profit is 2 per cent and the loss \$10, while if not paid until six months have elapsed the profit is only eighttenths of 1 per cent, and the loss is \$25. This is the same as turnover on merchandise, and loss will be

registered in proportion to the time it takes to collect an account.'

How Profit Is Lessened by Payment Delays.

"Amplifying the example it might be said that if a merchant set a price of \$1,000 on an article with the understanding that it was to be paid for in thirty days after purchase, and if it were not paid for until six months later, the merchant's profit would be reduced by the loss of interest on the money involved for the 150 days that elapsed between the time payment should have been made and the time it was paid. Figuring the interest at 6 per cent and the price of the article being \$1,000, it is plainly seen that the merchant's profit on the transaction has been lessened \$25 by the delay in payment. Similarly, if the article were paid for in ninety days instead of thirty, the merchant's profit would be reduced \$10.

"While an instance similar to the foregoing may be a bit extreme, much smaller losses from slow payment take their toll in the aggregate when the thousands of accounts on the books of a large store are considered. It is obvious that something must be done to check those losses and at the same time give credit a dignity and value that it now appears to lack.

"But how is the cure to be effected? In my opinion it can be effected most easily by pointing out to the shopping public just how matters stand and how necessary it is for the many thousands of persons who make up that public to adhere to their agreements to pay their bills in thirty days. That same spirit of honesty and fairness which makes the very great majority of them pay their bills will make them meet their obligations in thirty days if the matter is put up to them tact-

fully but, so to speak, as man to man.

"The best way to do this is through a campaign of co-operative advertising of an educational nature.

"What men are in business for is a reasonable return on their invested capital. Somehow the notion that the bigger the volume the bigger the profit got a hold on both manufacturers and retailers, and since then they have devoted every effort to build up increasingly large sales, quite blind to the fact that in order to do this they were cutting in on their profits. Prices are shaved down to the narrowest possible margin, sometimes even allowing no room for a profit at all. Overhead and production costs are incorrectly figured, all to increase sales and make the total volume larger than the previous year.

A Few Facts Too Often Ignored.

"Completely ignored is the fact that a small deficit on each transaction, multiplied by a large number of transactions, makes a loss that is sometimes ruinous in its proportions. Many a merchant, and still more manufacturers, have regarded with pride the volume of business done in a given year and then discovered, to their consternation, that it has cost them so much money that they are no longer in a position to continue business.

"The fundamental problems of business are costs and profits, not volume. Volume enters only as a means of reducing the former and increasing the latter. If it shows a tendency to reverse either process, it must be reduced to a point where it again effectively fulfills its functions. The sacrifice of either economy of operation or margin of profit for the sake of increasing volume is economically dangerous.

"The crux of the matter is that many business men do not know how to figure costs correctly. This is more often true of manufacturers than of retailers, for the latter, because of the very complexity of their establishments, are forced to maintain a careful accounting system. Many manufacturers, however,

ignore or miscalculate overhead, depreciation and other items entering into the cost of production and put a selling price on their goods which barely allows a profit. If they reduce this quotation, as for one reason or another they are often induced to, they register a loss on their merchandise—usually without being aware of the fact."

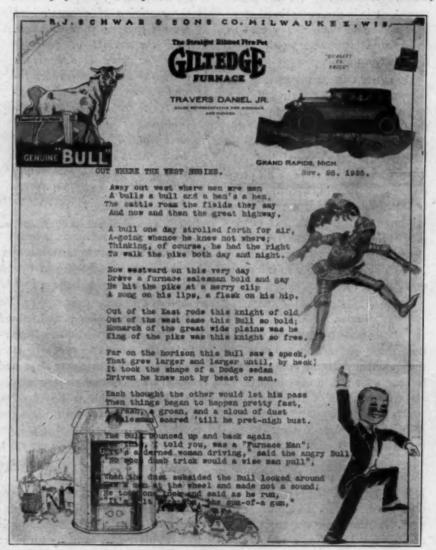
R. J. Schwab & Sons Company Holds 2 Day Sales Convention

Improvements In Gilt Edge Warm Air Furnace Among Surprises for Coming Year

R. J. SCHWAB & SONS COM-PANY, manufacturers of Gilt Edge furnaces, held their annual sales convention at the home office, in Milwaukee, on January fourth and fifth.

The meeting was replete with surprises in the nature of announcements of improvements to the Gilt Edge line of furnaces, to be adopted the early part of this year. Henry E. Schwab, vice-president and sales manager, opened the first session on Monday, January 4th, with an inspirational talk, greeting the new men and commenting on the outlook for 1926, after which general discussion and departmental talks were taken up in order for the balance of the day.

At six o'clock a banquet was held at the Martin Hotel Club Room,



How Travers Daniel, Jr., Got Even with "Pom"

under the tutelage of Mr. A. G. (Pom) Pomrening, toastmaster, and the usual hearty spirit of good fellowship, which is a characteristic of the Schwab organization, prevailed. After the dinner the group adjourned in a body to the Orpheum Theater, to enjoy a well-balanced vaudeville program.

Tuesday morning the general meeting was resumed and at 2 p. m., after a tasty lunch served at the Milwaukee Elks Club, a complete tour of the plant was made, as a finale of two days crammed full of

"pep," "vim" and "punch."

Unusual prosperity is prophesied for 1926 and with the contemplated enlargements and additions to the Schwab plant, together with the improvements to be embodied in the Gilt Edge line of furnaces, there is no doubt but that better service and a more efficient product will naturally stimulate the salesmen and the trade to greater activity and appreciation of the up and at 'em attitude of the Schwab organization.

The convention was a success.

case when no covering is used. I never cover my jobs, but paint the pipes; in this way they last longer and are better by reason of the fact that they are thus more easily kept clean."

We in the warm air heating industry cannot fail to retain pleasant memories of a man who has advanced knowledge of warm air heating as much as did Mr. Campbell. He was not the least bigoted, but always ready and willing to help a competitor.

Yours very truly, James Charles Allen.

Bridge & Beach Elects Officers and Directors January 19

At the stockholders' meeting of the Bridge & Beach Manufacturing Company, Tuesday, January 19th, the following directors were reelected: Hudson E. Bridge, L. H. Booch, Henry C. Hoener, John F. Shepley, Louis H. Riecke, Laurence D. Bridge and Geo. Leighton Bridge.

The board elected the following officers:

Hudson E. Bridge, chairman of the board; L. H. Booch, president and manager; Henry C. Hoener, vice-president; Laurence D. Bridge, vice-president; Geo. Leighton Bridge, vice-president; A. F. Gammeter, treasurer; Louis H. Riecke, secretary.

Abram Cox Stove Company Moves New York Office to 42nd Street

On January 15, 1926, the Abram Cox Stove Company moved its New York office from 113 East 34th street, where they have been located for the past three years, to their new location at 51 East 42nd street, corner of Vanderbilt avenue, known as the Vanderbilt Avenue building.

It is felt that the new location will be more convenient to the trade because it is the most centralized point in the city and, undoubtedly, the most convenient to reach. It is directly opposite the Grand Central terminal into which trains enter from all sections of the country.



Salesmen Attending R. J. Schwab & Sons Company Conference—Front Row—Left to Right—Travers Daniel, Jr., J. E. Ellston, A. E. Hildabrand, J. E. Wurm, Henry E. Schwab, H. F. Pugh and Fred Gottschalk. Middle Row—Left to Right—George Lange, A. G. (Pom) Pomrening, A. E. Ewert, H. O. Schroeder. Top Row—Left to Right—Pete Johnson (Champion Pipe & Fittings), Charles E. Schwab, H. H. Peters and Ralph Beauchamp

Late Angus K. Campbell Eulogized by Competitor in Warm Air Heating Industry

James Charles Allen, of the International Heater Company, makes some eulogistic remarks in connection with the passing of Angus K. Campbell, of the Campbell Heating Company, news of which appears in January 16th issue of American Artisan.

To AMERICAN ARTISAN:

It was with regret that I noted the passing of Angus K. Campbell, of the Campbell Heating Company, Des Moines, Iowa. Mr. Campbell

was a thorough student of warm air heating. I well remember when I first traveled Iowa, Mr. Campbell and I were figuring on the same installation job in a home in the central part of the state. As we were waiting for the decision to be made by the owner, Mr. Campbell asked me if I had figured to cover the warm air pipes with asbestos paper. I replied that I had. He then said: "Young man, that is bad practice, as it draws moisture in the summer which will rust the ducts. That is not all. It permits the radiation of more heat into the cellar than is the

Shuttle trains run between this station and the Pennsylvania station. In addition, the subway entrance on 42nd street is directly in front of the entrance to the office building. Through this subway station, connection is made with the East and West Side subway for points in Brooklyn and Long Island.

It was thought the trade would appreciate this move, not only be-

cause of the convenience of reaching the location, but because it is in the center of a group of heating and plumbing manufacturing concerns.

The Abram Cox Stove Company completed their moving on January 15, and invites all members of the trade to come in and look over their new offices.

New telephone numbers, Murray Hill 7075 and 7076. he said, "which manufactures the Sunbeam cabinet heater; we are in an unusually good position to cooperate with the individual merchant; in most instances we go to him direct with our proposition and in every instance, we offer to direct his efforts in the most modern and remunerative way.

"We have men well educated in the modern methods of merchandising, calling on the dealer with XXth century ideas on the successful selling of our Sunbeam Cabinet Heater.

"Our national advertising in itself is one of the strongest aids we offer, and the red-blooded merchant can use it successfully in his fight against chain store competition."

With Mr. Baker in the Fox Furnace Company's attractive booth were M. H. Klett and W. H. Turner who represent the cabinet heater furnace lines in Illinois.

If you know of an unusually difficult furnace installation, give us the facts about it and we will reproduce it in American Artisan. Build the industry!

S. H. Baker, of Fox Furnace, Says Retail Hardware Men Can Easily Combat Chain Store

Says Furnace Installer Should Use Manufacturer's National Advertising

IN an interview with S. H. Baker, Division Sales Manager of the Fox Furnace Company, at the Missouri Retail Hardware Convention, the conversation turned to the topic uppermost in all retail hardware men's minds, "How to Fight the Chain Store Menace." Mr. Baker expressed himself quite emphatically

on the subject, giving as his opinion that if the dealer would get acquainted with what the loyal manufacturer is willing to do to help him and would really avail himself of the assistance rightfully his, the chain store would soon cease to be a menace.

"Take our company for instance,"



Exhibit of Fox Furnace Company at the Missouri Retail Hardware Convention. The gentleman on the left is M. H. Klett; right, W. H. Turner.

Practical Furnace Man Wants to Know What's in a Name

Says "Heating Engineer" Is Misleading to General Public

APRACTICAL Furnace Man" (for such he styles himself, not wishing, out of modesty, to reveal his name) is in a quandary. He wants to get clear on one subject. Here it is:

To AMERICAN ARTISAN:

A great number of furnace men call themselves heating engineers, and I should like to know just what qualifications are necessary for anyone to assume that title. Must a person complete a certain course of studies, and pass a required examination, and have a certificate to that effect, or is it an imaginary title, with nothing behind it?

I am well acquainted with several who are calling themselves engineers, who are merely practical furnace men, and some of them are only handy men, but they sell and install furnaces (the result can be imagined) and the dear old general public is footing the bill.

I should like to know your definition, so let's have it straight from the shoulder, and never mind where the chips fall.

Yours very truly, "A Practical Furnace Man."

For the information of "A Practical Furnace Man," we wish to state that there is no officially recognized title such as "heating engineer"; that is, there is no course of study which, when completed, will entitle the student to the designation of heating engineer—more's the pity. There is no law, however, prohibiting a man from assuming that title if he so elects.

Mr. Webster describes an engineer as one who is versed in or follows any calling or profession. That definition is somewhat loose, and its very looseness has probably led many a man who thinks he can install warm air furnaces to the belief that he comes within the bounds of that definition in the warm air heating industry.

It is needless, of course, to say that the title or designation, "heating engineer," is often misleading. In common parlance it sounds "ritzy," giving the public the impression that the man who has the said designation is in possession of specialized or technical knowledge on a subject which he often does not have. In such instances the title is merely a subterfuge or camouflage behind which he conceals his lack of knowledge.

If each prospective customer were acquainted with the fact that no such official designation exists, he would attribute to that title only the importance it deserves. However, people are in the habit of tak-

ing things for granted. Their bump of curiosity is seldom large enough to cause them to seek much below the surface on things which do not in their opinion seem important. For that reason the man who has little more than the title to offer "gets by" for a time. During that time he is able to do a lot of harm for the industry which he represents.

In spite of all that can be done to protect the individual, ways and means are still found to prey upon his credulity. If the National Warm Air Heating & Ventilating Association could work out some means of making the designation heating engineer mean something and then compile a set of questions which if answered correctly would show that the man employing the title was fully qualified to follow the precepts of the Standard Furnace Code, that would be a step in the right direction.

Langenberg Manufacturing Company Dealers Treated to 3-Day Course

Nine Men in Service 25 Years Receive Gold Watches at Banquet

THE Langenberg Manufacturing Company, of St. Louis, makers of the Front Rank warm air furnace, held their annual sales convention last week.

Somewhat of a departure from the ordinary sales convention was indulged in by the company. During the last three days of the convention the company conducted a 3-day course on heating and ventilating, to which were invited a number of their best dealers. Six of them responded and went to St. Louis at their own expense to take the course. It was quite an innovation, but its educational value cannot be determnied as yet. "I do believe," said E. B. Langenberg. "that our entire sales force and the dealers had cleared up in their minds a number of engineering problems and that they all will be benefited by the course."

25-Year Employes Given Gold Watches

Nine employes of the company, who have been in the service of the company for twenty-five years or longer, were presented with gold watches by the company at the banquet Thursday night.

The veterans who received the watches are: R. T. Burke, Christ. Ruemler, William Hohlt, John Stueck, William Shriner, Thomas Carey, Fred Axthelm, William Howell and John Morard, who has been in the employ of the company for forty-five years, and who loaded the first carload of furnaces which the company shipped out of St. Louis.

The gift watches bear the words, "Faithful Service," the employe's name, his length of service and the name of the company. E. B. Langenberg, vice-president of the com-

pany, acted as toastmaster at the banquet. Thursday's meeting was the company's tenth annual sales banquet, attended by eighty persons. The first banquet was attended by twelve.

George F. Langenberg, president of the company, as well as the firm's other officers and heads of the various departments, attended the banquet, which was held at the Dorr & Zeller Catering Company. The entertainment program, which followed the banquet, included musical numbers by Mrs. Rose Mortimer Cox, Glen Lee and members of an orchestra. Joseph S. McIntyre, a director of the company, made an address in connection with moving pictures of a five-months trip he made in Palestine last year.

Edward C. Hoffmann Goes With Malleable Iron Range

Edward C. Hoffmann, for the past ten years director of sales and advertising with the Copper Clad Malleable Range Company, St. Louis, recently resigned his position with that company, and is now associated with the Malleable Iron Range Company, Beaver Dam, Wisconsin, in a similar capacity.

Gas Equipment Concern Buys Stove Company

The Standard Gas Equipment Corporation of New York announced recently the purchase of Rathbone, Sard & Company, manufacturers of gas ranges at Aurora, Illinois. The acquisition will double the output of the Standard organization and give it a national distribution. R. C. Hoffman, Jr., president of the corporation, said that new stock probably would be issued to finance the purchase of the Aurora plant and to provide capital for other purposes.

The Standard corporation was formed in 1924 by the merger of the William M. Crane Company of New York, the Baltimore Gas Appliance and Manufacturing Company of Baltimore and the General Gas Appliance Company of New York. To this combination now

will be added a company which was formed in 1830.

Stopping Heat Leaks in Buildings Told in Department of Commerce Bulletin

If you are called upon to find the cause of cold drafts in rooms or buildings, here are some of the things to look for, as given in a recent bulletin of the Department of Commerce:

Cracks around windows and doors, broken window panes and unprotected heating pipes. All such places should have prompt attention.

Go over all windows to see that putty is in place around the panes.

The use of weatherstripping will take care of most of the cracks around a window and the saving of coal will be well worth while in a large number of houses.

Look to the outside dors. Doors are often poorly fitted and air passes freely both above and below them. The crack below the door is often so large that cold air sweeps across the floor, keeping the room cold. A strip of cloth or felt nailed to the floor or to the door will keep out much of the cold. Hinges are not always well fitted into the door and frame, allowing much cold air to enter the house. This can be remedied by resetting the hinges.

In houses where there is no firestopping between the studs of the wall, cold air can pass freely from the attic to the basement. In such homes if the plaster goes down only a little below the top of the baseboard, much air enters the rooms under the baseboards, where they do not fit closely. Such cracks should be closed.

In some houses the warm air can pass from the basement upward between the studs. If such is the case it is advisable to close up the openings between the joists with old brick or some other material. Basement doors and windows should be examined and made as tight as those in the rest of the house. Cold air entering the basement cools the heating pipes and furnace and the floor above.

The covering of the furnace and of steam and water heating pipes, especially in the basement, is advisable. Although insulation may be expensive, it is well to consider the cost of fuel and saving that can be effected.

There are things that can be done to keep the house comfortable that do not cost money, but require some time and attention.

The locking of windows when closed, the drawing down of shades, the turning off of heat in an unused room or at night when windows are open, periodical care of heating equipment, all require a little time and thought, but will save heat. This means the saving of fuel for the nation and lessened household expense. Special attention should be given to ventilation.

National Distribution Conference Suggests Study of Partial Payment Plan

The expansion of the partial payment plan of buying, or, from the viewpoint of the merchant, installment selling, has reached such a point that business is showing a disposition to find out where it is leading.

The National Distribution Conference suggested, to that end, that a careful study of it be made by the Chamber of Commerce of the United States to determine:

- 1. The effect upon the general credit structure as well as the cost and the safest methods of financing installment sales;
- 2. The approximate extent to which the installment buying public is committed to future installment payments in relation to its current income;
- 3. The probable effect on the consuming public and business of further extension of installment selling.

"Development of installment selling," says the committee which made a survey of methods of distribution, "was not pronounced until the advent of the automobile. Today, however, installment selling is employed in the sale of multitudes of articles.

L. Wayne Arny Works Out Series of Ads For Furnace Dealer Use

Series Is In Effect An Advertising Campaign Covering Entire Year

THE man who doubts the value of advertising in these days when magazine pages sell for \$5,000.00 and more per insertion is either looking at it from the wrong point of view or else has the wrong impression about advertising.

Advertising, when well done and conservatively planned, pays. It

advertisers have enjoyed during the past years, one fundamental stands out above all others. It is saying the same thing over and over inmany different places until the truths in the statement become impressed upon public consciousness.

It is a policy that can be applied to the warm air industry with tell-

ments, aiming to impress upon the reading public the superiority of warm air as a method of heating and of tying the dealer closer to his prospects through the avenue of service.

By the use of these ads dealers will receive more inquiries for service. If they look upon that service, not as an item of expense, but as a means of securing future prospects, they will profit from the advertising far in excess of its actual cost, and they will lay the foundation for more business at better prices.

While the cost of the space needed for the advertisements varies in proportion to the circulation of the papers in which they are to run, the average is about \$5.00 per month. They are double column, five inches deep.

Any warm air furnace dealer may get the series by writing to the National Warm Air Heating and Ventilating 'Association, 52 West Gay street, Columbus, Ohio, and by stating that, if the copy is acceptable, they will be placed in the dealer's local paper. The mats may be obtained for \$1.50 per set, which is the actual cost of making them.

It should be remembered that, as with any advertising campaign, the more display these advertisements gain the greater will be the profit to each advertiser. In other words, the more dealers use the campaign the greater the effect will be upon the industry as a whole.

100 Main Street 100 Main Street the more dealers use the company the greater the effect will the industry as a whole

New Slant on Cost
Accounting in Pamphlet by
Department of Manufacture
The time was when we fi

The time was when we figured costs very simply—ten yards of material at ten cents a yard; two hours of labor at fifty cents an hour; two dollars thrown in for the mysterious element of overhead; and we had all the necessary figures for correct costs.

Times have changed since those comparatively recent days in cost accounting. There is a new slant on cost accounting contained in a pamphlet just issued by the Department of Manufacture of the Cham-

Are You One of the Baked Millions?

"Warm Air Heat is Best for Every Home" Air in millions of American homes this month is drier than that of the Saharah desert—drier than the average person can stand and retain health.

This is the result of supplying only one of the factors of comfort—heat. Humidity and ventilation—the other two factors—are equally important.

Keep the water pan of your warm air furnace always full: there is no other way of providing humidity during the winter months.

John Jones & Company

WARM AIR IS THE ONLY HEATING SYSTEM THAT WILL SUPPLY THE 3 ESSENTIALS TO COMFORT—HEAT, HUMIDITY AND VENTILATION.

pays the man who sells automobiles, where each sale represents hundreds of dollars; it pays the manufacturer of soap, who relies upon volume alone for his profit. It also pays the man who sells and installs warm air furnaces, providing he plans his campaign with a thought to the size of his business, his clientele and the product which he has to offer.

While there are many factors contributing to the successes which ing effect, not by any one individual, but by groups working to a common purpose.

Such is the theory upon which a series of warm air furnace dealer advertisements prepared by the National Warm Air Heating and Ventilating Association have been based. These advertisements, twelve of them, one for each month in the year, are available to all dealers, either in copy or mat form. They are distinctly "good will" advertise-

ber of Commerce of the United States, which shows how far we have gone in our thinking and knowledge of cost accounting. Some may think that it shows how complicated we can make a simple subject, but a review of this pamphlet will be enlightening.

According to this pamphlet:

"A standard cost system is one

Cost Acounting Through the Use of Standards. In reality it is intended to focus attention on the necessity for the standardization of practice in cost accounting through the use of standards. The pamphlet is easy to read and worth reading. Every executive, no matter how little he has studied the techniquie of cost accounting, will understand it.

warm air from fires kept burning in the cellar circulated, thus supplying heat which tempered the apartment. This same principle is used today with the improvement that the air is passed between the sections of a furnace and conveyed through pipes in the walls to the rooms to be heated.

"This mode of heating has the advantages over other methods, in that it is low in first cost and economical in the consumption of fuel. A light fire can be maintained in spring and fall; the apparatus can be entirely neglected in winter if the premises are vacant and no harm results. It is healthful, as the air from the outside can be used; it is clean, if properly installed and operated; it burns all kinds of fuel-oil, gas, coal-successfully. purtenances used can be made artistic and thus pleasing to the eye; no floor space is consumed with this method, as registers may be placed in the walls, and as they require little space, a much larger proportion of the area of the rooms is available for general use. The dirt attendant upon firing is kept in the basement; automatic regulation may be installed; warm air may be used in combination with water, and outside buildings also may be heated with one apparatus.

"It is an ideal system when the proper style of heater is selected, the best heater being one that has large spaces between castings and casing so that the temperature of the air delivered need not be high. Moisture is easily introduced through vapor pans and thus the atmosphere of the home made delightful.

"This classification is held in Chicago Rotary by A. W. Glessner, president of the Excelsior Steel Furnace Company, who is said to be the oldest maker of high-class warm air heaters in the country."

The immense value to the industry of such items as this will be fully appreciated by all warm air furnace dealers. You, too, are members of Rotary clubs, chambers of commerce. Why not try to emulate Mr. Glessner in this respect in your own town?

When It Is Winter Outside It Should Be Summer Within

"Warm Air
Heat is
Best
for Every
Home"

.Snow, sleet, cold north winds—none of the rigors of winter should make it difficult for you to keep your home as balmy as a day in June.

If you find it difficult to maintain an even. mild temperature in every room of the house: if you have to fire too often or burn too much fuel, then 'phone for our heating expert TODAY.

He will gladly examine your heating system and tell you what is wrong—and there will be no charge for this examination

John Jones & Company

100 Main Street

WARM AIR IS THE ONLY HEATING SYSTEM THAT WILL SUPPLY THE 3 ESSENTIALS TO COMFORT—HEAT HUMIDITY AND VENTILATION.

One of the Constructed Ads.

which employs predetermined figures in the accounting in place of actual costs of products. In a standard cost system the sum total of the standard costs for the goods produced is compared with the total outlay in money during the period of such production. The procedure is the reverse of that employed in the job cost system. In the latter the actual costs are allotted to the individual products or lots. In a standard cost system cost values are assigned to the products and the total of such assigned values compared with the actual outlay for production."

The subject of this treatise is

Boosting the Industry Where Boosting Actually Boosts

An item of extreme interest appeared in the *Gyrator*, the official organ of the Chicago Rotary Club, which proves that some men in the warm air heating industry are awake to their possibilities and opportunities. Under the heading: "Little Journeys in Classification," the item ran as follows:

"Heating by warm air is probably the commonest method used, and next to the open fire, it is the oldest method known. Visitors to the ruins of Pompeii are shown the remains of a bath-house constructed with double walls between which

Fire!!!

"Strictly "
Preventable"

with -

SPARKS ON ROOFS—the classification growing out of the still extensive employment of wooden shingles—climbed, in 1923, from sixth place, which it held in 1922, to fifth. In 1921 it stood seventh. Illinois, Indiana, Missouri and California established the worst records, with losses of \$1,618,939, \$1,106,516, \$982,402 and \$749,419, respectively—the California loss being exclusive of the Berkeley fire, the result of which appears under Exposure (Including Conflagration). Sparks on roofs piled up a national total of \$15,931,342 in 1923 as compared with \$11,-875,719 in the previous year.

Wooden shingle roofs are easy targets for stray embers from chimneys, from burning roofs nearby and from many other sources. Soft coal used for fuel aggravates the danger of roof ignition. Approved fire-retardant roofings are to be had at little, if any, additional cost, and at no sacrifice of line, color or durability. Truly has it been said that roofs of wooden shingles constitute "stepping stenes" for the fire demon.

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Chain Store Competition Subject of Discussion at Missouri Hardware Convention

Hughes, of Butler Brothers, Classifies Hardware Men in Three Types

THE fight for the survival of the small hardware retailer against the competition of chain stores operated by large concerns is again before the Missouri hardware retailers, 300 strong, who opened their twenty-eighth annual convention at the Hotel Statler this week.

Two years ago one of the country's largest mail order houses opened two retail stores in Chicago and recently another in Kansas City. It is now the small retailer's problem to meet the large scale buying and selling of these stores with an extremely carefully ordered business management which will permit him to approximate the low selling prices of the chain stores and still maintain his profit, according to the hardware men.

Serious Menace

In the opinion of F. X. Becherer, Secretary of the Missouri Retail Hardware Association, the inroads of the chain store are a serious menace to the small retailer. "He will be wiped out unless his buying is done with extreme care and his selling with that sense of local service which will make his product appreciated as well for the personal service he puts behind it as for its quality," Secretary Becherer said.

During 1925 the hardware trade experienced a year of very close buying, but, in anticipation of a much better year for 1926, the convention is attempting to teach the small retailer to make the best use of his money in careful ordering of his business.

Business Ethics

Prices in the industry are extremely stable at present, with the only possible movement in a downward direction. "There is absolutely no room for any upward price movement," Secretary Becherer added.

"Business Ethics," by Hal J.

Belleville of the Commonwealth Steel Company, opened the convention addresses of the morning of the first day, followed during the afternoon session by "Salesmanship from the Retailers' Standpoint," by Edgar Gegenbach, sales manager of Scruggs-Vandervoort-Barney Dry Goods Company.

E. W. Hughes, sales manager for But er Brothers, and Eugene L. Johnson, assistant secretary of the Shapleigh Hardware Company, also addressed the convention.



F. X. Becherer

A special entertainment program provided music and dancing in the main hotel ballroom during the evening of the first day, and a separate program for the women attending the convention began the following day with a shopping tour throughout the downtown section and an inspection of the new Union Market. In the afternoon the women will join the convention theater party.

An auto tour of the city ended at the Mayfair Hotel for luncheon, after which the women visited the studios of station KMOX, the Voice of St. Louis, located in the Mayfair Hotel

Four important things for the retail merchant to do to make a success in his business were brought out by Mr. Hughes.

CONTRACTOR CASSACTIONS

Make your store attractive, organize your help, have the kind of merchandise in stock at the time the people in your trade territory want seasonable goods and put a selling program back of this and you have the secrets of the success of the retail merchant, Hughes explained.

"No store," he said, "can successfully operate without being organized to sell. No store can operate efficiently unless employes are trained to do their share. Even in the instance of stores being so small that the proprietor cannot afford to have an assistant all the time, a boy will be needed to help in the mornings and afternoons, and he must be a worker as well as his boss."

Buying Way to Fortune

"Some merchants," he said, "try to buy their way to fortune when it is a recognized fact that the selling of goods and merchandise brings in the profit. The two are absolutely divorced, he explained, as the net profit of any store comes directly through selling.

Hughes stated that a survey of merchants showed there are three kinds—the one with a good location, or possibly a poor location, doing a business sufficient from closing up, but whose store shows no sign whatever of thought or attention given to its appearance, or is any special effort being made to push the sales. This merchant, he said, will sooner or later be in difficulty with the credit department.

"A second type," he stated, "is the merchant with a good location and a fairly good stock of merchandise, but the store is untidy and no effort has been made to improve the appearance of the front or interior. Despite the fact there is no selling force back of such a store, Hughes declared, the business is fairly successful, but the successful days are



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TRADE EXTENSION COMMITTEE

numbered and it either is a question of time before he finds it necessary to adopt a more aggressive spirit or cease business.

Organization Is the Thing

"The third and last kind," he said, "is the one with his store properly organized. This one looks well to appearance of his store front and his show windows are in keeping with the windows of the chain store or successful independent merchant."

An era of closer margin of profit is being faced because the problem no longer is production, but distribution, Alfred P. Haake, former professor of economics at the University of Wisconsin, told delegates.

The consumption of the products of the amazing production system worked out during the World War now is necessarily American for the most part, the needs of Europe being largely met from European sources, since European sources, since European sources, the resulting the production, he explained.

"This means that America's production power is 50 per cent in excess of the country's needs because of wartime industrial inflation, and the problem is to create a demand by encouraging the purchase of new commodities before the old is worn out. This forced selling is making inroads upon the pocketbook of the retailer and consumer, because it means profits to so many persons between manufacture and sale."

Officers in charge of the convention were: J. F. Parrish of Hamilton, Missouri, president; C. C. Carter of Carthage, Missouri, vice president; F. X. Becherer of St. Louis, secretary, and J. G. Wade of Monroe City, Missouri, treasurer.

Two further addresses during the day's sessions were by E. W. Hughes and Eugene L. Johnson.

E. W. Hughes, sales manager of Butler Brothers, spoke on "The Successful Retailer." Advocating modern sales methods, he said: "The net profits of any store come through selling and not through buying, and today merchants must sidestep the age old theory that buying is the profit-producing phase of their businesses."

"The long-time credit system, detrimental to quick stock turnover, is becoming unfashionable," E. L. Johnson, assistant secretary of the Shapleigh Hardware Company, said, in urging an adjustment of stock to meet the needs of the community.

Paul J. Stokes of the National Retail Hardware Association, spoke on "The Business Outlook," and Harold V. Bervig of the same organization discussed "Making It Pay."

Election of officers for 1926 took place during the afternoon of the last day, with the following results: C. C. Carter of Carthage, Missouri, president; J. G. Wade of Monroe City, Missouri, vice-president; F.W. Warnhoff of Boonville, Missouri, treasurer, and F. X. Becherer of

St. Louis, secretary. Two members of the Executive Committee, elected to replace A. M. Hoffman of Sedalia and E. L. Bahn of Cape Girardeau, are G. Eberlin of Hermann, Missouri, and J. F. Parrish of Hamilton, Missouri, the retiring president.

Exhibiting at the convention was the Wheeling Corrugating Company, with J. H. Robinson in charge. Other representatives who were at the convention were S. Knippinberg, J. J. Watkins, Bill Wamsley. Geo. Wodicka, L. F. Sherman and A. W. Muldner.

The American Steel & Wire Company also had an exhibit at the convention. Men representing the company at the convention were J. L. Lane, W. R. Walker, R. E. Barnes, A. R. Baldwin, Jr., and E. L. Scofield.

First Aid Kit Necessary in Hardware Store Where Small Cuts Are Frequent

Teach All Clerks How to Use Set—It May Avoid a Layoff or Save a Life

By RICHARD S. BOND

Minersville daily read, "clerk in our local hardware store, was buried this morning at the Laurel Hill Cemetery. Two weeks ago, while sorting some miscellaneous hardware, he scratched himself with a piece of tin. Blood poisoning set in, and . . ."

Is it necessary to continue? The fictitious "Jereh Palmot" of Minersville is so common in actual life that the end of this paragraph may be visualized by anyone. Thousands of "Jereh Palmots" are dying yearly from these so-called minor cuts, scratches and bumps.

The average hardware merchant can show you the latest thing in twine holders, delivery methods, fountain pen fillers or collection letters, but ask to see his first-aid kit and he will look at you in amazemen.

A first-aid kit, to him, means

something for the doctor, or for the bathroom cabinet at home. If the clerk cuts himself at work, he is expected to wrap the cut with a piece of brown paper, make a few unnecessary remarks, and go along with his work.

Yet it is from these little cuts that so many lay-offs and even deaths occur. Of course, when the cut is serious enough to take the clerk to the nearest physician, it is dressed properly. So, this might make you remember how few of these "serious" cuts have ever proved fatal. It is the little wound that causes the trouble—the little one that the clerk laughs at as he wraps his handkerchief around it.

It isn't necessary to stock up with a dozen cure-alls, or to go to any great expense. A visit to the local druggist with a dollar or two in your pocket will take care of your absolute requirements. A well-

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RESEARCH ASSOCIATION
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stocked first-aid kit is of course very desirable, but a very few articles will take care of the average injury.

Two or three bandages, some sterilized gauze, a little vaseline jelly-plain white and carbolated; a bottle of iodine, one of aromatic spirits of ammonia, a roll of adhesive plaster-without buying another thing you will have something that may, within a month or two, save you considerable money.

When these supplies are secured, take half an hour some morning to teach the entire force how to use them and why they should be used. You will not be ridiculed by any means. As we have lost a President's son on account of a minor foot injury, and one of our strongest men on account of a minor hand injury, within the last year or so, anyone is willing to listen to a few sugestions on how to take care of such injuries when they are first received-glad to, in fact.

Teach the clerks how to take care of their tiny wounds. Tell them not to wash blood clots away; not to touch open wounds with their fingers; not to pull clothing from a burn; not to put water on an open wound unless that water is sterilized; and not to put absorbent cotton on an open wound or burn.

These are a few don'ts. Add to them a few "do's," such as:

Keep cool; wait until conscious before giving liquid stimulant; when mixing a dose of aromatic spirits of ammonia, use half a teaspoonful to one-third glass of water; when punctured with a nail, squeeze the wound and let the pure blood wash out the impurities before dressing; dress a wound immediately instead of allowing dirt and dust to get into it; for small wounds or cuts, wash clean with sterilized water or at least under running water, rub with a little vaseline carbolated and bandage lightly with sterilized gauze; and most important of all, get a doctor immediately if the wound is serious.

Why go to the trouble of dressing a wound in this manner when you have had hundreds that were never dressed? Merely because it is usually the one hundred and first wound that refuses to heal without such a dressing,

When you have cleaned the little cut and covered it with your vaseline carbolated, you have started it on the road to healing. When you have covered it with the sterilized gauze, you have made it impossible for dirt, dust or germs to enter and retard the healing. Then, and not until then, should you be willing to go about your work.

A little first-aid knowledge and a little first-aid kit are well worth being listed with the assets of any business.



American Society of Heating and Ventilating Engineers, New York City, January 26, 1926—continues in Buffalo, January 27, 1926. Ferry C. Houghton, Secretary, 29 West 39th Street, New York City.

Oklahoma Hardware and Implement Association and Exhibition, Masonic Temple, Oklahoma City, January 26, 27 and 28, 1926. Charles L. Unger, Secretary-Treasurer, Oklahoma City.
Indiana Retail Hardware Association, Indianapolis, January 26 to 29, 1926. G. F. Sheely, Secretary, 911-913 Meyer-Kiser Building, Indianapolis.
Wisconsin Sheet Metal Contractors Association, Gold Room, Wisconsin Hotel, Milwaukee, February 2 and 3, 1926. R. E. Kelm, secretary, 367 Third Street, Milwaukee.
Nebraska Retail Hardware Association, Omaha, February 2 to 5, 1926. George H. Dietz, Secretary, Little Building, Lincoln.
Wisconsin Retail Hardware Association, Misconsin Retail Hardware Association, Retail Hardware Association, Retail Hardware Association, Misconsin Retail Hard Oklahoma Hardware and Implement

George H. Dietz, Schrady, ing, Lincoln.
Wisconsin Retail Hardware Association, Milwaukee, February 2 to 5, 1926.
P. J. Jacobs, Secretary-Treasurer, Stevens Point, Wisconsin.
Michigan Retail Hardware Association, Grand Rapids, February 9 to 12, 1926.
A. J. Scott, Secretary, Marine City.
New York State Retail Hardware Association, Rochester, February 9 to 12, 1926.
John B. Foley, Secretary, 4-12-13

sociation, Rochester, February 9 to 12, 1926. John B. Foley, Secretary, 4-12-13 City Bank Building, Syracuse.

Iowa Retail Hardware Association, Des Moines, February 9, 10, 11 and 12, 1926. A. R. Sale, Secretary, Mason City. New York State Sheet Metal Contractors Association, Elmira, New York, February 10 and 11, 1926. John J. Yager, Secretary, 817 Sycamore Street, Buffalo. North Dakota Retail Hardware Association Convention and Exhibition, Fargo.

ciation Convention and Exhibition, Fargo, February 10, 11 and 12, 1926. C. N. Barnes, Secretary, Grand Forks.

Pennsylvania and Atlantic Seaboard Hardware Association convention and exhibition, Commercial Museum, Phila-delphia, February 15-19, 1926. Sharon E. Jones, Secretary, 604 Wesley Building, Jones, Secre Philadelphia.

Indiana Sheet Metal Contractors' Association, Hotel Severin, Indianapolis, February 16, 17 and 18, 1926. Leslie W. Beach, Secretary, Richmond, Indiana.

Indiana Fur-Mets, Hotel Severin, Indianapolis, February 16, 17 and 18, 1926.

O. Voorhees, 36 West Tenth Street, Indianapolis.

Indiana Warm Air Heating and Ventilating Association, Hotel Severin, In-dianapolis, February 16, 17 and 18, 1926. Frank E. Anderson, Secretary, Terre Haute.

Connecticut Retail Hardware Associa-tion, Hotel Bond, Hartford, February 18 and 19, 1926. Henry S. Hitchcock, Sec-

retary, Woodbury.

Montana Implement and Hardware As sociation, Great Falls, February 18, 19 and 20, 1926. A. C. Talmage, Secretary-

Treasurer, Bozeman.
Illinois Retail Hardware Association,
Sherman House, Chicago, February 16
to 18, 1926. Leon D. Nish, Secretary,

Ohio Hardware Association, Cleveland, February 16 to 19, 1926. James B. Car-son, Secretary, 1001 Schwind Building,

Dayton.

Minnesota Retail Hardware Association, St. Paul, February 16 to 19, 1926.

C. H. Casey, Secretary, Nicollet and 24th Streets, Minneapolis.

New England Retail Hardware Association, Boston, Massachusetts, February 22 to 24, 1926. George A. Fiel, Secretary, 80 Federal Street, Boston, Massachusetts

South Dakota Retail Hardware Asso

South Dakota Retail Hardware Association, Sioux Falls, February 23 to 25, 1926. C. H. Casey, Secretary, Nicollet and 24th Streets, Minneapolis, Minnesota. Virginia Retail Hardware Convention and Exhibition, Jefferson Hotel, Richmond, February 23, 24 and 25, 1926. Thomas B. Howell, Secretary, 301 East Grace, Room 906, Richmond.
Ohio Sheet Metal Contractors' Association, Toledo, Ohio, February 24, 25 and 26, 1926. George F. Mooney, State Secretary, New First National Bank Building, Columbus, Ohio. F. C. Dunn, Local Secretary, care Builders' Exchange, Toledo.

The Michigan Sheet Metal and Roofing Contractors' Association, Post Tavern Headquarters, Battle Creek, March 1, 2, 3 and 4, 1925. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids.

Rapids.
California Retail Hardware and Implement Association, Hotel Whitcomb, San Francisco, March 16, 17 and 18, 1926. Le Roy Smith, Secretary, 112 Market Street, San Francisco. Southeastern Retail Hardware and Im-

plement Association, (composed of Alabama, Florida, Georgia and Tennessee)
Convention and Exhibition, Atlanta,
Georgia, May 10, 11 and 12, 1926. Walter Harlan, Secretary, 701 Grand Theatre Building, Atlanta.

Building, Atlanta.
Arkansas Retail Hardware Association, Little Rock, Arkansas, May, 1926.
L. P. Biggs, Secretary, 815 Southern Trust Building, Little Rock.
National Association of Sheet Metal Contractors, Louisville, Kentucky, May 24 to 28, 1926. Edwin L. Seabrook, Secretary, 608 East Chestnut Street, Philadelphia, Pennsylvania.
Carolinas Hardware Association.

arolinas Hardware Association, Raleigh, North Carolina, June 8 to 10, 1926. A. R. Craig, Secretary, 717-18 Commercial Bank Building, Charlotte, North Carolina.

Mississippi Retail Hardware and Implement Association, Biloxi, June 21, 22 and 23, 1926. Guy Nason, Secretary Starkville.



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Steel Market Is in Quieter Stage—Production Keeps to Good Rate

Pig Iron Market Quiet—Easiness Develops in Non-Ferrous Metals

QUIETER market conditions in steel at present reflect the well-covered position of consumers generally which has resulted from the heavy tonnage ordered out in December against expiring and lower-priced last quarter contracts.

This accumulation of specifications is carrying the mills along at a good rate, but new buying is moderate and first quarter commitments are not being drawn against liberally as yet.

There are some exceptions to this rule, particularly steel bars, for which several districts report a surprisingly active demand.

The immediate sluggishness of the market is regarded as a passing phase which is likely to be corrected in natural course within a few weeks.

Here and there recurrence of price weakness is apparent.

These factors show the absence of tightness in present conditions and are making producers more and more disposed to be conservative when the question of price advances is raised. The strong element is the lack of speculation. The reaction of the sheet bar market from the higher prices recently paid suggests the difficulty of sustaining a too rapid advance.

Copper

Refinery positions remained quiet and unchanged, although there was a little better undertone.

Electrolytic is offered at 13.90 cents f.o.b refinery for prompt and January, 13.95 cents for February and 14 cents for March.

Lake copper is quoted at 14.12½ cents delivered and casting copper is slow at about 13.30 cents f.o.b. refinery.

Tin

The New York market is steady in consequence of the firmer tone in London, but trading has not been on a large scale and very little has been heard from the consumers today.

Prevailing prices for Straits are 61.75 cents for spot, January and February, 61.50 cents for March and 61.25 cents for April.

Lead

Lead has been selling a little more regularly than the other metals, but it did not escape the Monday weakness.

Here the market appears to be fairly well balanced, but prices are fairly high and so it would not take much weakness abroad to put the market here down.

Zinc

With output going at a high rate it is apparent stocks will increase unless exports are resumed, and there is no prospect of this event soon.

January supplies still are tight, but smelters have booked little for later positions and the latter are 10 to 30 points discount.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.00 to \$17.50; old iron axles, \$25.50 to \$26.00; steel springs, \$18.50 to \$19.00; No. 1 wrought iron, \$13.75 to \$14.25; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 5 cents, and cast aluminum, 20 cents.

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$40.50; commercial 45-55, \$38.00, and plumbers', \$35.50, all

per 100 lbs. Pig Iron

Pig iron shipments continue high, an encouraging factor in an otherwise dull market.

Some smelters are asking for

speedier deliveries, indicating high melting rates. The speculative element is lacking. No second quarter inquiries are out for any grades.

A few foundry and malleable inquiries have been received for spot shipment in small carloads.

Interest in Bessemer iron is confined to a few single carloads.

Basic sales and inquiries are absent. Prices continue firm.

The trade expects an ore advance of 50 cents or \$1 will stimulate present levels if they do not bring about an advance.

At Chicago increasing of interest in northern iron is being displayed by melters and sales are good considering the broad coverage for this quarter.

The market has not been affected by the unsettlement in the markets immediately to the east and \$23, Chicago furnace, holds for No. 2 foundry and malleable and \$23.50 for No. 1 foundry.

Buying of pig iron at Birmingham has eased off considerably, but quotations are firm at \$22 to \$23 for No. 2 foundry.

Production continues at maximum, and no foundry iron is accumulating.

Sales of pig iron in small lots for prompt delivery and in moderate size tonnages for the second quarter are more numerous. The aggregate for the second quarter closed during the past week was around 10,000 tons. This included 1,200 tons of 2.25 to 2.75 silicon iron for Springfield, Ohio, melter, and 1,000 tons of foundry iron for an Indiana user. The former is reported to have been placed with a southern Ohio melter at \$21.50, Ironton, while \$23, lake furnace, was done on the northern iron. Northern furnaces were unable to compete successfully with Ohio furnaces in that territory during the past week.

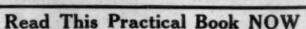


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PEORIA, ILLINOIS

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS	HARDWARE, SHEET METAL SUPPLIES,	Post Hole Iwan's Split Handle (Eureka)	Geo. W. Diener Mfg. Co. Ea. No. 02 Gasolene Torch, 1 qt
PIG IRON Chicago Foundry	WARM AIR FURNACE FITTINGS AND ACCESSORIES.	4-ft. Handleper dos. \$14 00 7-ft. Handleper dos. 36 00 Iwan's Hercules pattern, per dos	No. 0256, Kerosene, or Gasolene Torch, 1 qt. 7 56 No. 10 Tinners' Furn. Square tank, 1 gal 12 68 No. 15 Tinners' Furn. Round tank, 1 gal 12 06 No. 21 Gas Soldering Fur-
FIRST QUALITY BRIGHT	LEAD American Pig\$10 80 Bar	EAVES TROUGH Galv. Crimpedge, crated75 & 5%	No. 21 Gas Seldering Furnace
TIN PLATES IC 20x28 112 sheets\$27 00 IX 20x28	Sheet Full Collsper 100 lbs. 14 00 Cut Collsper 100 lbs. 14 25	ELBOWS	Double Blast Mfg. Co. Gasolone, Nos. 25 and 3860% Quick Meal Stove Co.
IXXX 20x28 17 20 IXXXX 20x28 18 40	TIN Pig Tinper 100 lbs. 70 50	Conductor Pipe Mileor. Galv., plain or corrugated, round flat Crimp.	Vesuvius, F. O. B. St. Louis 36%. (Extra Disct. for large quantities)
TERNE PLATES Per Box IC 20x28, 40-lb. 112 sheets \$35 10 IX 20x28, 40-lb. " 28 00	Bar Tinper 100 lbs. 71 50 ASBESTOS	8td. Gauge	Chas. A. Henes, Inc. Busser No. 1
IC 20x28, 40-lb. 112 sheets \$25 16 IX 20x28, 40-lb. "28 00 IC 20x28, 40-lb. "28 00 IX 20x28, 30-lb. "21 30 IX 20x28, 30-lb. "30 30 IX 20x28, 35-lb. "30 30 IX 20x28, 25-lb. "30 30 IX 20x28, 20-lb. "17 30 IV 20x28, 20-lb. "17 30 IV 20x28, 20-lb. "16 66	Paper up to 1/16 6c per lb. Roll board 84c per lb. Mill board 8/32 to 4 6c per lb. Corrugated Paper (250	Fquare Corrugated Standard Gauge50% 26 Gauge30%	Busser No. 1
IC 10x24, 20-lb 17 30 IV 20x24, 20-lb 10 65 IC 20x25, 15-lb 16 65 IC 20x25, 12-lb 16 25 IC 20x25, 12-lb 18 25	BRUSHES Hot Air Pipe Cleaning	Portice Elbows Standard Gauge Conductor Pipe,	Pails (Galv. after made), 10-qt
"ARMCO" INGOT IRON PLATES No. 8 ga. up to and including % in.—100 lbs 4 55	Bristle, with handle, each \$v \$6 Fine Cleaning Steel Only, each 1 26	plain or corrugated. Not nested	GLASS .
CORE PLATES	BURRS Coppers Burrs only45%	1-piece Corrugated. Uniform Blue "Milcor" No. 28 gauge.	Single Strength, A. 25-in. bracket
Cokes, 80 lbs., base, 20x22812 70 Cokes, 90 lbs., base, 20x2512 95 Cokes, 100 lbs., base, 20x2512 35 Cokes, 107 lbs., base, IC 20x25	CEMENT, FURNACE	5-inch	Bingle Strength A, all other brackets
20x28 13 60 Cokes, 135 1ba., base, IX 20x28 16 40 Cokes, 155 lbs., base, 56 sheets abeets 15 bbs., base, 56 cokes, 175 lbs., base, 56	American Seal, 5-lb. cans, net \$ 45 American Seal, 50-lb. cans, net 90 American Seal, 56-lb. cans, net 200 Asbestos, 5-lb. cans, net 45 Pecoraper 100 lbs. 7 51	Special Corrugated 6-inch \$1 25 7-inch 1 66	No. 2
sheets 9 70 Cokes, 195 lbs., base, 55 sheets 10 65	CHIMNEY TOPS Iwan's Complete Rev. &	Adjustable—Uniform Blue "Milcor" No. 28 Gauge. Uniform Blue.	Conductor Pipe Milcor Perfection Wire35% Eaves Trough
BASE 10 gaper 100 lbs. \$8 90 "Armee" 10 ga.per 100 lbs. 4 66	Vent 30% Iwan's Iron Mountain only 35% Standard 30 to 40% CLINKER TONGS	5-inch	Milcor Eclipse Wire15%
ONE PASS COLD ROLLED BLACK No. 18-20per 100 lbs. \$8 80	Front Rank, each	WOOD FACES-50% off list.	Milcor Steel (gav. after forming) List plus 12 % Milcor Selfeck E. T. Wire, List plus 10 %
No. 23-24 per 100 lbs. 3 26 No. 25 per 100 lbs. 3 20 No. 27 per 100 lbs. 2 20 No. 28 per 100 lbs. 4 10 No. 23 per 100 lbs. 4 10	Damper Aome, with tail pieces, per doz	736-6-12% (100 rods)\$29 02 1948-6-14% (100 rods) 44 08 FILES AND BASPS	V. & B. No. 1, each\$6 38 Conductor
"Armee" 28per 100 lbs. \$6 55	COPPERS—Soldering Pointed Roofing	Heller's (American)59-10% American	Milcor "Direct Drive" Wrought Iron for wood or brick15%
No. 16	3 lb. and heavierper lb. 40c 1½ lbper lb. 45c 3 lbper lb. 48c 1½ lbper lb. 55c 1 lbper lb. 60c	McClellan	V. & B. No. 1, each\$0 26 HUMIDIFIERS
	CORNICE BRAKES	Nicholson	"Front-Rank," Automatie
BAR SOLDER Warranted 50-50per 100 lbs. \$40 50	Chicage Steel Bending Nos. 1 to 6BNet	FIRE POTS Ashton Mfg. Co.	In single lots
45-55 per 100 lbs. 38 00 Plumbersper 100 lbs. 35 50	COUPLING HOSE Brassper don \$2 20 CUT-OFFS	Complete line Fire pots and Terches52%	LIFTERS Stove Cover
ZINC In Slabe	Kuehn's Korrekt Kutoffs: Galv., plain, round or cor. rd. standard gauge	Otto Berns Co. No. 1 Furn. Gasolene with large shield, 1 gal\$ 6 75 No. B Furn. Kerosene, 1	Copperedper gre. \$6 69 Alaskaper gre. 4 75
Cask Lots (600 lbs.) 14 60 Sheet Lots 15 60	DAMPERS "Yankee" Hot Alr	No. 10 Brasier, Kerosene or Gasolene, 10 gals 47 53 No. 5 Torch, Gasolene or	Tinners' Hickoryper dos. \$1 25
### BRASS 19% c Mill base 19% c Mill base 19% c Tubing, brazed base 27% c Wire, base 19% c 19% c Rods, base 17% c 17	7 inch, each 20c, dos\$1 70 8 inch, each 25c, dos 2 40 9 inch, each 30c, dos 2 75 10 inch, each 23c, dos 3 60 Smake Pipe	No. 83 Torch, Gasolene, 1 quart No. 86 Torch, Gasolene, 1 pint 405	Galvanized steel mitres, and caps, end pieces, outlets30% Milcor Galv. one piece stamped40%
COPPER	7 inch, each 35 8 inch, each 40	Clayton & Lambert's East of west boundary line of	NAILS
Sheets, Chicago base	9 inch, each	East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Ne- braska, Kanssa, Oklahoma, Am- arillo, San Angelo and Laredo,	Cut Steel
Wire No. 11, B. & S. Ga20% e	8 inch, each	Texas	Common 3 16 Cement Coated 3 20

NISHEA

Portable and compact, Unishear cuts any flat stock quicker, better, cheaper-without burr, without distortion of material. Follows any line exactly, stops accurately at any point.

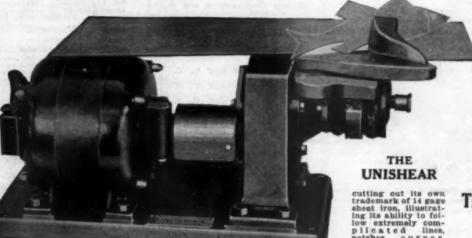
Needs but one operator even on largest work, straight or irregular.

Operates from lamp socket or power circuit. "General Electric Motor."

Capacity 14 U. S. gage Sheet Steel.

Any Voltage or Cycle Available.

curves,



Speed fifteen feet per minute.

Ask us to demonstrate this machine on your work.

Dealers and Salesmen wanted in unassigned territory.

The Unishear Co., Inc.

170 FIFTH AVENUE NEW YORK, N. Y.

THE DOUBLE TRUSS BENDING BRAKE=



All sizes up to 8 ft. 16 gauge capacity fitted with steel bending aprons. Longer and heavier brakes fitted with Double Truss extra heavy bending aprons.

THE best brake for all around sheet metal work and the lowest in price.

8 ft. 18 gauge capacity \$145.00 8 ft. 16 gauge capacity 185.00 8 ft. 14 gauge capacity 235.00 10 ft. 18 gauge capacity 260.00 10 ft. 16 gauge capacity 290.00

ALWAYS accurate because of the Double Truss Adjustment which is a feature that makes Double Truss Brakes popular.

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Also Manufacturers of the Electric City Gutter Former and Sterling Beader

CHICAGO STEEL CORNICE BRAKES



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No. 7 Ball Bearing Punch



Capacity, 34-inch through 36-inch.

Weight
Punch in center of
Length over all
Height of Gap __6½ lbs, 3½ inches _18 inches Tool shipped complete with 3 sets of Punches and Dies, 5/32-inch, 7/32-inch, 9/32-inch,

Write for Prices

Street

WHITNEY METAL TOOL CO. ROCKFORD, ILLINOIS

93 Forbes

ADVERTISERS' INDEX

The dash (-) indicates that the advertisement does not appear in this issue.

Aeolus Dickinson Co	M		
Allred Mfg. Co 50		PASTE	Medium tale surfaced
Allred Mfg. Co 50	Marsh Lumber Co		Red Rosin Sheeting, per ton
		Asbestos Dry Paste:	
		100-lb. barrel	SCREWS
	May-Fiebeger Co	100-lb. barrel 8 00 35-lb. pail 3 26	
		36-lb. pail	Sheet Metal
	Merchant & Evans Co	6-1b. bag 55	No. 7, %x%, per gross No. 10, %x3/16, per gross. No. 14, %x%, per gross
	Metsner Stove Repair Co	3 % -1b. cartons 30	No. 14 Wark per grees.
	Meyer Furnace Co., The		red 14, 38 x %, per grues
	Meyer Bros. Co., F., The	Conductor	
Arex Co 41	Milwaukee Corr. Co Back Cover		SHEARS, TINNERS' &
Auer Register Co	Monitor Furnace Co	"Interlock" Galvanized	MACHINISTS'
B	Mt. Vernon Furn. & Mfg. Co 4	Crated and nested (all gauges)	Viking
	Mueller Furnace Co., L. J 2	Crated and not nested	
Berger Bros. Co 45	N	(all gauges)	Lennex Throatless
	National Air Moistener Co 8	Square Corrugated A and B and	No. 18
		Octagon	Shear blades (f. o. b. Marshalltown,
	National Enameling & Stamp-	29 gauge	
Braden Mfg. Co 47		26 gauge	Peerless Steel Squaring
Brillion Furnace Co 4		24 gauge	Foot Power
Burgress Soldering Furnace Co. 45	New Jersey Zinc Sales Co., The -	"Milcor" "Titelock" Uniform	No. 1—30", 18 ga. cap No. 2—34", 18 ga. cap No. 4—55", 18 ga. cap No. 10—120", 22 ga. cap. No. 4A—52", 16 ga. cap.
C	Niehaus Furnace Repair Co	Hiue Stove	No. 3-36", 18 ga. cap
Carr Supply Co	Northern Institute	36 gauge, 6 inch U. C.	No. 10-120" 32 ga, Cap
Chicago Elbow Machine Co		nested	No. 4A-52", 16 ga. cap.
Chicago Furnace Supply Co	0	26 gauge, 7 inch U. C.	
Chicago Solder Co	Oakland Fdy. Co	nested	Cast Iron Foot Power
Clark-Smith Hardware Co 41		nested	No. 01-30", 18 ga. cap
		nested	Power Driven
Clayton & Lambert Mfg. Co	P	nested	No. 100 Series, 2 Shaft I
Cleveland Castings Pattern Co. 8	Parker-Kalon Corp	28 gauge, 7 inch U. C.	No. 142-42", 18 ga. cap.
Cleveland Cooperative Stove Co. 5	Peck, H. E 50	nested	No. 100 Series, 2 Shaft D No. 142—42", 18 ga. cap. (No. 200 Series, 2 Shaft U
Coes Wrench Co 47	Peninsular Stove Co	nested	No. 242 49" 14 Th
Copper & Brass Research	Peck, Stow & Wilcox Co	30 gauge, 6 inch U. C.	neath Drive.) No. 242—42", 14 ga. cap. (No. 300 Series, 3 Shaft U
Association 37	Pecora Paint Co	nested	neath Drive.) No. 342-42", 10 ga. cap. No. 372-72", 10 ga. cap. (No. 500 Series, 2 Shaft U
Connors Paint Co., Wm	Peerless Fdy. Co	30 gauge, 7 inch U. C.	No. 342-43", 10 ga. cap.
Col-Burn Heater Co		nested 14 00	No. 373-73", 10 ga. cap.
Cortright Metal Roofing Co 41	Pennsylvania and Atlantic Sea-	T-Jeint Made up	(No. 500 Series, I Shart U
	board Hdw. Assn	6-inch, 38 gaper 100 22 50	No. 506-96", 10 ga, cap.
Cox Stove Co., Abram	Premier Warm Air Heater Co		neath Drive.) No. 596—96", 10 ga. cap. (No. 600 Series, 3 Shaft U
Crown Oil Burner Co	Q	Furnace Pipe	neath Drive.) No. 6120—120", 3/16" cap.
Cutler & Proctor Stove Co	Quick Furnace & Supply Co	Pipe Fittings	No. 6120-120", 3/16" cap.
D	Quick Meal Stove Co 45	Double Wall Pipe and Pipe Fittings	
Davis and Co., Inc., C. S	Quincy Pattern Co 8	Iron Pipe Galvanized 50%	SHOES
Dieckmann Co., Ferdinand 39	R	Galvanised and Black	Mileor
Diener Mfg., Geo. W 45		Fittings	Galv. Std. Gauge, Plain corg. round flat crimp.
Double Blast Mfg. Co 45		Milcor Galvanized Pipe and Fittings50%	corg. round flat crimp.
Double-Duty Elbow Co	Rock Island Register Co 9	A STATE OF THE PARTY OF THE PAR	36 gauge round flat crimp. 34 gauge round flat crimp.
		Lead	Conductor
Dreis & Krump Mfg. Co43-45	Robinson Furnace Co	Per 100 lbs	
E E		NAVEDO GRAFE	SNIPS, TINNERS'
magelaneld Mrg. Cc	Rudy Furnace Co	POKERS, STOVE	
Elbing Mfg. Co	Rybolt Heater Co	Wr't Steel, str't or bent,	Clover Leaf
Excelsior Steel Furn. Co	S	per dos. \$0 75	Star
F	Sall Mountain Co 6	Nickel Plated, coll handles,	Mileor
Fanner Mfg. Co	Schill Brothers Co	per dos. 1 10	
Federal Mfg. Co 8	Schwab & Sons, R. J	POKERS, FURNACE	SQUARES
Floral City Heater Co			
Forest City Fdy. & Mfg. Co 7		Bach	Steel and Iron
Forming Machine Corp 43		PULLEYS	(Add for bluing, \$3 per dos.
		PULLBIO	Mire
Fox Furnace Co		Furnace Tackleper dos. \$8 68	Try
What a file of the state of the		per gross 6 00	Try and Bevel
Friedley-Voshardt Co 39			
G	Standard Furn. & Supply Co	Furnace Screw (encased)	
Goethal Co., The Alfred C.	Standard Furn. & Supply Co Standard Ventilator Co 41	per doz. 75	Fox'sper dat.
Goethal Co., The Alfred C	Standard Furn. & Supply Co — Standard Ventilator Co 41 Stanna Register Co 10	Ventilating Register	Fox'sper dat.
Goethal Co., The Alfred C Gerock Bros. Mfg. Co 41 Graff Furnace Co. 41	Standard Furn. & Supply Co — Standard Ventilator Co 41 Stanna Register Co 10	Ventilating Register Per gross 9 00	Fox'sper dat.
Goethal Co., The Alfred C Gerock Bros. Mfg. Co	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register Per gross 588 Mall, per pair 38	Fox'sper des. Winterbottom's
Goethal Co., The Alfred C	Standard Furn. & Supply Co. — Standard Ventilator Co. 41 Stearns Register Co. 10 St. Clair Foundry Corp. 9 St. Louis Heating Co. 4	Ventilating Register Per gross 9 00	Fox's per der. Winterbottom's STOPPERS, FLUE
Goethal Co., The Alfred C. 41	Standard Furn. & Supply Co. — Standard Ventilator Co. 41 Stearns Register Co. 10 St. Clair Foundry Corp. 9 St. Louis Heating Co. 4 St. Louis Tech. Inst. —	Ventilating Register Per gross 588 Mall, per pair 38	Fox's per der. Winterbottom's FOPPERS, FLUE
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 48 49 49	Standard Furn. & Supply Co. — Standard Ventilator Co. 41 Stearns Register Co. 10 St. Clair Foundry Corp. 9 St. Louis Heating Co. 4 St. Louis Tech. Inst. — Sturtevant Co. —	Ventilating Register Per gross	Fox's per der. Winterbottom's FOPPERS, FLUE
Goethal Co., The Alfred C. Gerock Bros. Mfs. Co	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register Per gross	Fox'sper des. Winterbottom's
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register Per gross	For's per don. For's per don. For's per don. For's per don. Froppers, Flue Common per don. Gem, No. 1 per don. Gem, Sat, No. 3 per don.
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register Per gross	Try and Mitre
Goethal Co., The Alfred C. Gerock Bros. Mfs. Co. 41 Graff Furnace Co. Graff Furnace Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 5 Hardware Specialty Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heattick, E. G. 6	Standard Furn. & Supply Co. —	Ventilating Register Per gross	For's per don. For's per don. For's per don. For's per don. Froppers, Flue Common per don. Gem, No. 1 per don. Gem, Sat, No. 3 per don.
Goethal Co., The Alfred C. Gerock Bros. Mfs. Co. 41	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register	Try and Mitre
Goethal Co., The Alfred C. 41	Standard Furn. & Supply Co. —	Ventilating Register Per gross	Try and Mitre
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41	Standard Furn. & Supply Co. — Standard Ventilator Co	Ventilating Register	Try and Mitre
Goethal Co., The Alfred C. Gerock Bros. Mfs. Co	Standard Furn. & Supply Co. —	Ventilating Register Per gross	Try and Mitre
Goethal Co., The Alfred C Gerock Bros. Mfg. Co	Standard Furn. & Supply Co. —	Ventilating Register Per gross	Try and Mitre
Goethal Co., The Alfred C. Gerock Bros. Mfs. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 11 Heat & Cooley Co. 11 Heating Systems & Supply Co. — Henry Furnace & Fdy. Co. — Heros-Snyder Ca Wessler Ca., H. E. Homer Furnace Co. — Hopson Co. W. C. — 141 142 143 144 145 145 145 145 145 145	Standard Furn. & Supply Co. —	Ventilating Register Per gross 908 Small, per pair 20 Large, per pair 50 PUTTY Commercial Putty, 100-lb. kits 3240 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS	Try and Mitre
Goethal Co., The Aifred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 47 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Harrington & King Perf. Ce. 41 Heat & Cooley Co. 11 Heatick, E. G. 11 Heating Systems & Supply Co. — Henry Furnace & Fdy. Co. — Hero Furnace Co. — Hess-Snyder Ca. — Wessler Ca., H. E. — Hopson Co. W. C. 20	Standard Furn. & Supply Co. —	Ventilating Register Per gross \$ 90 Small, per pair \$ 30 Large, per pair \$ 50 FUTTY Commercial Putty, 100-lb, kits \$ 40 QUADRANTS Malleable Iron Damper \$ 10 % BASEBOARD REGISTERS Excelsior \$ 50 % FLOOR REGISTERS AND BORDERS Cast Iron \$ 20 %	For's per der
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 8 Hardware Specialty Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heartick, E. G. Heating Systems & Supply Co. Henry Furnace & Fdy. Co. — Hess-Snyder Ca. — Hosse-Snyder Ca. — Homer Furnace Co. — Homer Purnace Co. — Hopson Co., W. C. 39 Hussey Co., C. G. 41	Standard Furn. & Supply Co. —	Ventilating Register Per gross	For's per der
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 9 Harrington & King Perf. Co. 41 Hard & Cooley Co. 11 Heartick, E. G. 11 Heartick, E. G. 9 Herry Furnace & Fdy. Co. — Hero Furnace Co. — Hess-Snyder Ca Wessler Ca., H. E. — Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co.	Standard Furn. & Supply Co. —	Ventilating Register Per gross \$00 Small, per pair \$00 Example \$10	For's per der
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 8 Hardware Specialty Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heartick, E. G. Heating Systems & Supply Co. Henry Furnace & Fdy. Co. — Hero Furnace Co. — Hess-Snyder Co. — Hoss-Snyder Co. — Homer Furnace Co. — Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co. — Ideal Furnace Co. — Inland Steel Co. — Inland Steel Co.	Standard Furn. & Supply Co. — Standard Ventilator Co. 41 Stearns Register Co. 10 St. Clair Foundry Corp. 9 St. Louis Heating Co. 4 St. Louis Tech. Inst. — Sturtevant Co. — Success Heater Mfg. Co. — Taylor Co. N. & G. 23 Thatcher Co. 7 Thermo Gas Furnace Co. 45 Thomas & Armstrong Co. The Tuttle & Bailey Mfg. Co. — Utica Heater Co. 3 Unishear Co., The 43 Vedder Pattern Works 8	Ventilating Register Per gross	For's per der
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 11 Heat & Cooley Co. 11 Heatiek, E. G. 11 Heatiek, E. G. 11 Heatiek, E. G. 11 Heatiek, E. G. 11 Heartiek, E. G. 11 Heas-Shyder Co. 11 Hopson Co., W. C. 29 Hussey Co., C. G. 41 Ideal Furnace Co. 11 Independent Beginger Co. 11	Standard Furn. & Supply Co. —	Ventilating Register Per gross	For's per der
Goethal Co., The Aifred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Harrington & King Perf. Ce. 41 Heat & Cooley Co. 11 Heartick, E. G. 11 Heartick, E. G 41 Henry Furnace & Fdy. Co 41 Hers Furnace Co 41 Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co 41 Ideal Furnace Co 9 Indeal Furnace Co. 9 Independent Register Co. 9 Interpational Heater Co. 14	Standard Furn. & Supply Co. —	Ventilating Register Per gross \$ 968 Small, per pair \$ 260 Example Small	For's per der
Goethal Co., The Aifred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Harrington & King Perf. Ce. 41 Heat & Cooley Co. 11 Heartick, E. G. 11 Heartick, E. G 41 Henry Furnace & Fdy. Co 41 Hers-Furnace Co 41 Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co 41 Ideal Furnace Co 9 Independent Register Co. 9 Interpational Heater Co. 14	Standard Furn. & Supply Co. —	Ventilating Register Per gross 900 Small, per pair 100 Small, per pair 100 Large, per pair 100 Large, per pair 100 Commercial Putty, 100-lb. kits 100 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Adjustable Ceiling 40% Adjustable Ceiling 40% Register Faces—Cast and Steel Japanned, Bronzed and	Try and Mitre
Goethal Co., The Aifred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Hardware Specialty Co. 9 Hardware Specialty Co. 9 Harrington & King Perf. Ce. 41 Heat & Cooley Co. 11 Heartick, E. G. 11 Heartick, E. G 41 Henry Furnace & Fdy. Co 41 Hers Furnace Co 41 Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co 41 Ideal Furnace Co 9 Indeal Furnace Co. 9 Independent Register Co. 9 Interpational Heater Co. 14	Standard Furn. & Supply Co. — Standard Ventilator Co.	Ventilating Register Per gross 906 Small, per pair 360 Large, per pair 560 PUTTY Cemmercial Putty, 100-lb. kits \$3 40 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Baseboard 40% Baseboard 40% Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40%	Try and Mitre
Goethal Co., The Aifred C Gerock Bros. Mfs. Co	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 10 Large, per pair 10 RUTTY Commercial Putty, 100-lb. kits 13 QUADRANTS Malleable Iron Damper 10 BASKBOARD REGISTERS Excelsior 50 FLOOR REGISTERS AND BORDERS Cast Iron 20 Steel and Semi-Steel 40 Adjustable Ceiling 40 Adjustable Ceiling 40 Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40 Large Register Faces—Cast 40 Large Regi	For's per der
Goethal Co., The Aifred C. Gerock Bros. Mfs. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 8 Hardware Specialty Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heartick, E. G. Heating Systems & Supply Co. Henry Furnace & Fdy. Co. — Hess-Snyder Ca. — Hoss-Snyder Ca. — Homer Furnace Co. — I Ideal Furnace Co. — Inland Steel Co. — Inland Steel Co. — Inland Steel Co. — Independent Register Co. 9 International Heater Co. 14 Iwan Bros. Co. K Keith Furnace Co. — Kirk-Latty Mfs. Co. 8	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 10 Large, per pair 10 RUTTY Commercial Putty, 100-lb. kits 13 QUADRANTS Malleable Iron Damper 10 BASKBOARD REGISTERS Excelsior 50 FLOOR REGISTERS AND BORDERS Cast Iron 20 Steel and Semi-Steel 40 Adjustable Ceiling 40 Adjustable Ceiling 40 Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40 Large Register Faces—Cast 40 Large Regi	Try and Mitre
Goethal Co., The Aifred C. Gerock Bros. Mfs. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 Hanson Heater Co. 8 Hardware Specialty Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heartick, E. G. Heating Systems & Supply Co. Henry Furnace & Fdy. Co. — Hess-Snyder Ca. — Hoss-Snyder Ca. — Homer Furnace Co. — I Ideal Furnace Co. — Inland Steel Co. — Inland Steel Co. — Inland Steel Co. — Independent Register Co. 9 International Heater Co. 14 Iwan Bros. Co. K Keith Furnace Co. — Kirk-Latty Mfs. Co. 8	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 360 Large, per pair 560 PUTTY Cemmercial Putty, 100-lb. kits \$3 40 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Baseboard 40% Baseboard 40% Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40%	Try and Mitre
Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41 Graff Furnace Co. 7 Gray & Dudley Co. 7 Great Lakes Supply Co. 47 H Hanson Heater Co. 9 Harrington & King Perf. Co. 41 Hart & Cooley Co. 11 Heartick, E. G. 11 Heartick, E. G. 9 Hearting Systems & Supply Co. — Heror Furnace Co. — Heror Furnace Co. — Hess-Snyder Ca Wessler Ca., H. E. — Homer Furnace Co. 41 Hopson Co., W. C. 39 Hussey Co., C. G. 41 Ideal Furnace Co. — Indeal Furnace Co. — Independent Register Co. 9 International Heater Co. 14 Iwan Bros. Co. — Krik-Latty Mfg. Co. 8 Kruse Co. — Kruse Co. — L	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 30 Large, per pair 50 PUTTY Commercial Putty, 100-lb, kits 3240 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Baseboard 40% Baseboard 40% Hegister Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40% Large Register Faces—Cast, 14x14 to 33x42 60% Large Register Faces—Steel, 14x14 to 35x42 65%	Try and Mitre. For's per dan per dan winterbottem's per dan gem, No. 1 per dan gem, Standard 30 to WIRE Plain annealed wire, No. 3 per 100 lbs. Wire cloth—Black painted, 12-mesh, per 100 sq. ft Cattle Wire—galvanised catch weight spool, per 100 lbs. Galvanised Hog Wire, 20 rod spool, per spool. Galvanised plain wire, No. 5, per 100 lbs. WRINGERS
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Goethal Co., The Alfred C. Gerock Bros. Mfg. Co. 41	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 30 Large, per pair 50 PUTTY Commercial Putty, 100-lb, kits 3240 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Baseboard 40% Baseboard 40% Hegister Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40% Large Register Faces—Cast, 14x14 to 33x42 60% Large Register Faces—Steel, 14x14 to 35x42 65%	Try and Mitre. For's per dan per dan winterbottem's per dan gem, No. 1 per dan gem, Standard 30 to WIRE Plain annealed wire, No. 3 per 100 lbs. Wire cloth—Black painted, 12-mesh, per 100 sq. ft Cattle Wire—galvanised catch weight spool, per 100 lbs. Galvanised Hog Wire, 20 rod spool, per spool. Galvanised plain wire, No. 5, per 100 lbs. WRINGERS
Goethal Co., The Aifred C Gerock Bros. Mfg. Co	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 360 Email, per pair 960 FUTTY Commercial Putty, 100-lb. kits 32 40 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Haseboard 40% Haseboard 40% Adjustable Celling Ventilators 40% Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40% Large Register Faces—Cast 14x14 to 38x25 60% Large Register Faces—Steel 65% BIDGE ROLL Mileor Galv. Plain Ridge Roll	Try and Mitre. For's per dan per dan winterbottem's per dan gem, No. 1 per dan gem, Standard 30 to WIRE Plain annealed wire, No. 3 per 100 lbs. Wire cloth—Black painted, 12-mesh, per 100 sq. ft Cattle Wire—galvanised catch weight spool, per 100 lbs. Galvanised Hog Wire, 20 rod spool, per spool. Galvanised plain wire, No. 5, per 100 lbs. WRINGERS
Goethal Co., The Aifred C Gerock Bros. Mfg. Co	Standard Furn. & Supply Co. —	Ventilating Register Per gross 906 Small, per pair 360 Email, per pair 960 FUTTY Commercial Putty, 100-lb. kits 32 40 QUADRANTS Malleable Iron Damper 10% BASEBOARD REGISTERS Excelsior 50% FLOOR REGISTERS AND BORDERS Cast Iron 20% Steel and Semi-Steel 40% Haseboard 40% Haseboard 40% Adjustable Celling Ventilators 40% Register Faces—Cast and Steel Japanned, Bronzed and Plated, 4x6 to 14x14 40% Large Register Faces—Cast 14x14 to 38x25 60% Large Register Faces—Steel 65% BIDGE ROLL Mileor Galv. Plain Ridge Roll	Try and Mitre. For'sper dar. For'sper dar. Winterbottom'sper dar. Winterbottom'sper dar. Gem, No. 1per dar. Gem, No. 1per dar. Gem, Sat, No. 3per dar. VENTILATORS Standardso to WIRE Plain annealed wire, No. 8 per 100 lba. Galvanised barb wire, per 100 lba. Wire cloth—Black painted, 12-mesh, per 100 sq. ft. Cattle Wire—galvanised catch weight spool, per 300 lba. Stove Pipe, per stons. No. 700, Guarantee per dar. 100 lba.
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Markets-Contin	ued from page 42
NETTING, POULTRY	BOOFING
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ing	Best grade, slate surf. prep'd \$3 30 Best tale surfaced 3 65 Medium tale surfaced 3 00
PASTE	Light tale surfaced 1 20
Asbestos Dry Paste:	Red Rosin Sheeting, per ton 57 00
100-lb. barrel	SCREWS
36-ID. pail 3 36	Sheet Metal
5-1b. bag	No. 7, %x%, per gross\$0 88 No. 10, %x3/16, per gross 75 No. 14, %x%, per gross 90
and the controlle title to	No. 14, %x%, per gross 90
Conductor	SHEARS, TINNERS &
"Interlock" Galvanized Crated and nested (all	MACHINISTS'
gauges)	Viking
gauges)	No. 18
Octagon	No. 18
29 gauge	Peerless Steel Squaring
24 gauge	Foot Power
"Milcor" "Titelock" Uniform	No. 3-36", 18 ga. cap16% No. 3-36", 18 ga. cap15%
36 gauge, 6 inch U. C.	No. 1-30", 18 ga. cap15%, No. 2-36", 18 ga. cap15%, No. 4-55", 18 ga. cap15%, No. 10-130", 25 ga. cap15%, No. 4A-52", 16 ga. cap15%
26 gauge, 7 inch U. C.	No. 4A-52", 16 ga. cap15% Cast Iron Foot Power
as gauge, 5 inch U. C.	No. 01-30", 18 ga. cap15%
28 gauge, 6 inch U. C.	Power Driven
nested	No. 100 Series, 2 Shaft Drive.) No. 142-42", 18 ga. cap16% (No. 200 Series, 2 Shaft Under-
nested	(No. 200 Series, 2 Shaft Under- neath Drive.)
30 gauge, 6 inch U. C.	No. 242-42", 14 ga. cap 15% (No. 200 Series, 2 Shaft Under-
30 gauge, 7 inch U. C.	neath Drive.) No. 342-42", 10 ga. cap15%
nested 14 00	No. 878-72", 10 ga. cap15% (No. 500 Series, 2 Shaft Under-
T-Jeint Made up 6-inch, 28 gaper 100 22 50	neath Drive.)
Furnace Pipe	(No. 200 Series, 2 Shaft Under- neath Drive.) No. 242—42", 14 ga. cap15%, (No. 300 Series, 3 Shaft Under- neath Drive.) No. 342—43", 10 ga. cap15%, (No. 500 Series, 2 Shaft Under- neath Drive.) Ro. 596—96", 10 ga. cap15%, (No. 600 Series, 3 Shaft Under- neath Drive.) No. 6120—120", 3/16" cap15%
Double Wall Pipe and Pipe Fittings	No. 6120-120", 3/16" cap15%
Single Wall Pipe, Round	SHOES
Galvanised and Black	Mileor
Fittings	Galv. Std. Gauge, Plain or corg. round flat crimp. 485, 26 gauge round flat crimp. 405, 24 gauge round flat crimp. 105,
Lead	34 gauge round flat crimp10% Conductor
Per 100 lbs\$12 50	Conductor
POREES, STOVE	SNIPS, TINNERS'
Wr't Steel, str't or bent,	Clover Leaf
Nickel Plated, coll handles,	MilcorNet

POKERS, FURNACE	SQUARES Steel and IronNet
PULLEYS	Steel and IronNet (Add for bluing, \$3 per dos. net.)
Furnace Tackleper doz. \$0 66	TryNet
Furnace Screw (encased)	Try and Bevel
per doz. 75	Fox'sper dox. \$6 00
Ventilating Register Per gross 9 00	Winterbottom's10%
Per gross 9 68 Small, per pair 30 Large, per pair 59	STOPPERS, PLUE
PUTTY	Commonper dos. \$1 10
Commercial Putty, 100-lb.	Gem, No. 1per dos. 1 10 Gem, flat, No. 3per dos. 1 00
QUADRANTS 40	VENTILATORS
Malleable Iron Damper10%	Standard 30 to 40%
BASEBOARD REGISTERS	AND A THE MANAGEMENT OF THE PARTY.
Excelsior50%	Plain annealed wire, No. 8
FLOOR REGISTERS AND BORDERS	per 100 lbs
Cast Tron	Plain annealed wire, No. 8 per 100 lbs
Steel and Semi-Steel40% Baseboard40%	12-mesh, per 100 sq. ft 2 10
Adjustable Ceiling Ventilators	catch weight spool, per
Register Faces—Cast and Steel	Galvanised Hog Wire, 80 rod
Japanned, Bronzed and Plated, 4x6 to 14x1440%	Galvanised plain wire, No. 9,
Large Hegister Faces-Cast.	Stove Pipe, per stone 1 16
14x14 to 33x42	WRINGERS
PIDGE POLL	No. 700, Guarantee per dos. \$55 00



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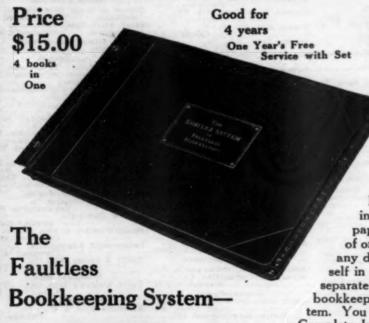
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For Sale—48 inch slip rollers, capacity No. 10 gauge. This machine sets on legs, is one year old and good as new. Equipped for hand power but can readily be arranged for motor drive. Address A-50, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 2-3t.

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Wanted—As soon as possible an all around plumber and steamfitter. We have a steady position for a man that would like to settle down in Northern Illinois, appreciates a good job. Please state age, nationality and wages expected. Address A-67, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 4-3t

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Wanted—Expert sheet metal worker (Not over 40 years of age) with ability to make quickly and neatly, Anything in Sheet Metal. Good pay and steady work. Address Shop Foreman, P. O. Box 123, North Emporia, Virginia.

Wanted—First-class tinner and sheet metal worker in Illinois town of 10,000. Steady job for the right man. Do not apply unless competent. Address A-62, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 3-3t

Wanted—Tinner. Must be first class in all lines of sheet metal work. Steady job for man knowing his line. The Metal Products Co., 118 N. Weber, Colorado Springs, Colorado. 4-3t

HELP WANTED

WANTED—One first class tinner, who is competent to figure ordinary sheet metal work coming into a country tin shop. We have a steady position for a tinner, that turns out neat work in a reasonable space of time. Address Arne O. Busterud, Crookston, Minnesota. 2-3t.

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Situation Wanted—By March 1st. By a first class combination plumber, tinner, steam fitter and all around repairing. Prefer a job with some good hardware firm. Married, want steady position the year around. Please state wages in first letter. Address A-70, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 4-3t

Situation Wanted—Live wire furnace and warm air heating engineer would like to get in correspondence with warm air furnace manufacturers that are interested in operating a retail furnace business in Milwaukee, Wisconsin. Address A-65, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Situation Wanted—I am open for a proposition on a commission basis with a reliable concern to sell plumbing or sheet metal goods on the road. Also have some tinners and plumbers tools which will sell cheap. Address M., P. O. Box 27, Oswego, Illinois.

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Situation Wanted—Would like to hear from some good firm that wants a com-petent man, experienced in furnace work and other branches of the trade. Address A-55, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 2-3t.

Situation Wanted—By married man, 43 years old. English speaking, competent in sheet metal, furnace and plumbing. Can also do well work and clerk in hardware store. Address A-54, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Situation Wanted—By young married man. Experienced tinner and furnace man. None but steady position desired. Prefer Wisconsin, Northern Iowa or Southern Minnesota. Address A-60, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

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Wanted—Set of used tinners tools and machines including an eight foot brake. State condition and price. Address E. W. Hiatt, Sarasota, Florida. 4-3t

Wanted — A complete set of tinner's tools. Address A-63, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 3-3t

Wanted—To buy second hand tinners' shop tools. Address C. D. Averill, Wayland, Michigan.

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The book, "Home Instruction for Sheet Metal Workers," by William Neubecker, and edited by Frank X. Morio, contains facts that you want to know and know how to use. A practical Instruction manual for the apprentice, mechanic and master sheet metal worker, covering the course of instruction given stadents in the sheet metal department at the New York Trade School. Cutting, forming, preparing full-size details from architects' blueprints, developing patterns and bending on the brake and setting the work together. Chapters on skylight and pitched skylights, stationary and movable louvres, turret sash, gearing, etc. 400 pages, 684 illustrations, bound in cloth, with 15 folding plates bound separately. Price \$5.00. Order from the Book Department, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

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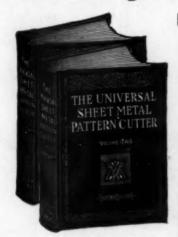
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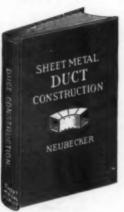
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